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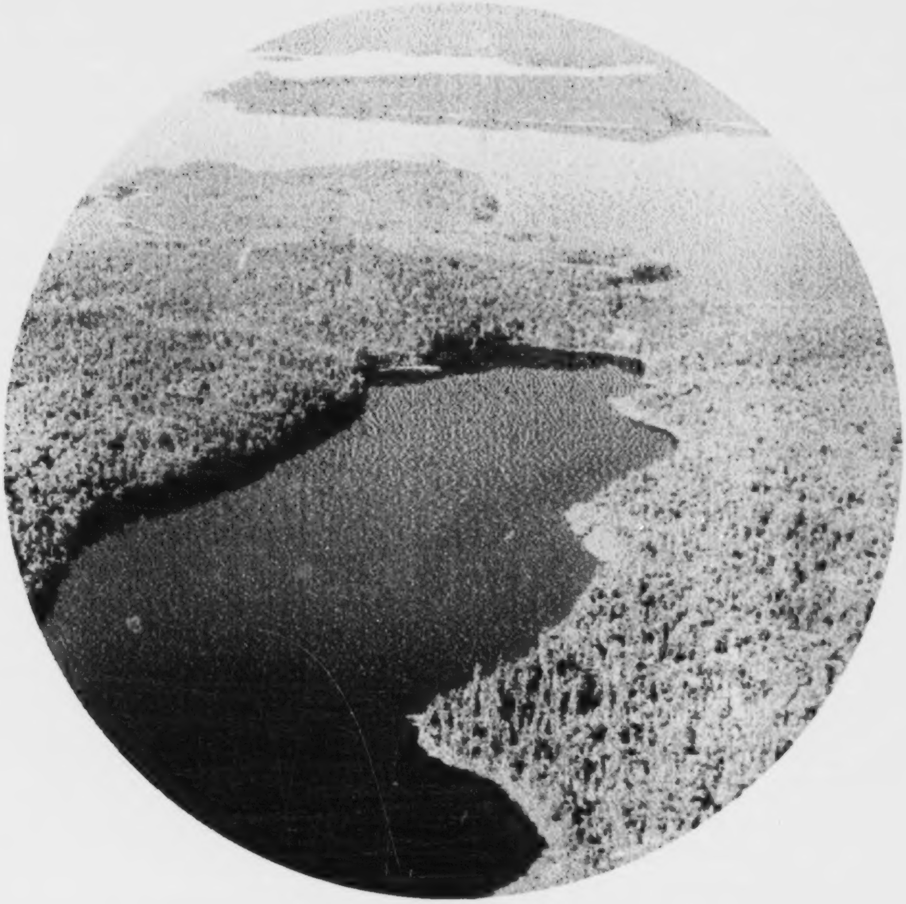

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A Review by the Ministry of Natural Resources Regarding the Class Environmental Assessment for Timber Management on Crown Lands in Ontario

"MNR's Timber Class EA Review"

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Ministry of Natural Resources
Regarding the
Class Environmental Assessment for Timber Management on Crown Lands in Ontario

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Table of Contents

EXECUTIVE SUMMARY v
SOMMAIRE ix
1.0 CONTEXT FOR THE TIMBER CLASS EA REVIEW 1
1.1 Introduction 1
1.2 Background 3
1.2.1 The Environmental Assessment Act and the Timber Class EA 3
1.2.2 Public Hearings - 1988 to 1992 3
1.2.3 The EA Board's 1994 Ruling 4
1.2.4 Subsequent Meetings of the EA Board 4
1.2.5 Judicial Review and Environmental Bill of Rights Investigations 5
1.3 Current Context 8
1.4 Public Consultation 10
1.4.1 Environmental Bill of Rights 10
1.4.2 Related Developments 11
1.4.3 Public Input in Preparing this Submission 11
2.0 THE UNDERTAKING 15
2.1 Description of the Undertaking 15
2.2 Term and Condition Index 18
3.0 EA IMPLEMENTATION EXPERIENCE AND RECOMMENDED TERMS AND CONDITIONS 25
3.1 Forest Management Planning 26
3.1.1 Introduction 26
3.1.2 Forest Management Plans - General 30
3.1.3 Public and Aboriginal Consultation 43
3.1.4 Issue Resolution and Bump-Up 66
3.1.5 Background Information and Management Unit Description 75
3.1.6 Planning Long-term Management Direction 87
3.1.7 Access Planning 90
3.1.8 Planning of Harvest, Renewal and Maintenance Operations 99
3.1.9 Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs 122
3.1.10 Annual Operations 138
3.1.11 Management Unit Annual Reporting 146
3.2 Monitoring 152
3.2.1 Management Unit Level Monitoring 153
3.2.1.1 Forest Operations Inspections 153
3.2.2 Provincial Level Monitoring 158
3.2.2.1 Audit Program 158
3.2.2.2 Silvicultural Effectiveness 163
3.2.2.3 Wildlife Population Monitoring 166
3.2.2.4 Monitoring Guideline Effectiveness 170
3.3 Reporting 175

3.3.1 Provincial Annual Report on Forest Management 176
3.3.2 State of the Forest Report 179

3.4 Negotiations with Aboriginal Peoples 182

3.5 Continuing Development and Programs 187
3.5.1 Advisory Committees 188
3.5.1.1 Regional Advisory Committees 188
3.5.1.2 Provincial Level Advisory Committees 192
3.5.2 Implementation Manuals 197
3.5.2.1 Implementation Manuals Review and Revision 197
3.5.2.2 Emulating Natural Disturbance Patterns 208
3.5.2.3 Criteria for Water Crossing Removal 212
3.5.3 Information Collection and Management 213
3.5.3.1 Inventory Information and Management Systems 213
3.5.3.2 Forest Ecosystem Classification Program 216
3.5.3.3 Northern Ontario Wetlands Evaluation System 218
3.5.3.4 Areas of Natural and Scientific Interest 220
3.5.4 Scientific Research and Technical Development 222
3.5.4.1 Growth and Yield Program 222
3.5.4.2 Full-tree Harvest and Full-tree Chipping Studies 224
3.5.4.3 Tending and Protection Improvement Programs 226
3.5.4.4 Old Growth 228
3.5.4.5 Data Systems and Analytical Methodologies 232
3.5.4.6 Forest Resource Assessment Policy 235
3.5.4.7 Roadless Wilderness Areas Policy 239
3.5.4.8 Professional and Technical Training Programs 241
3.5.4.9 District Land Use Guidelines 244
3.5.5 Public Education on Forest Management 246

3.6 Additional Proposals Resulting From Public Consultation 249
3.6.1 Wood Supply Strategy 249
3.6.2 Horse Logging 251

3.7 Administration of this EA Approval 252
3.7.1 Phase-In Provisions for this EA Approval 253
3.7.2 Five-Year EA Report and Monitoring of this Timber Class EA Approval 258
3.7.3 Amending Provisions for the EA Approval 264
3.7.4 Recorded Proceedings of the Timber Class EA Hearings 269

4.0 RECOMMENDED TERMS AND CONDITIONS 271

5.0 PROGRESS REPORTS 305

6.0 STATE OF THE FOREST REPORT, 2001 567

7.0 GLOSSARY OF TERMS 569

8.0 REFERENCE 601

EXECUTIVE SUMMARY

The Ministry of Natural Resources (MNR) is recommending that the Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario be extended and amended subject to terms and conditions described in this Timber Class Environmental Assessment (EA) Review.

This Timber Class EA Review responds to requirements of the *Environmental Assessment Act* and the decision of an Environmental Assessment Board released April 20, 1994 regarding a Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario. The specific requirements of this review are described in term and condition 114 of that decision.

The context for forest management in Ontario has changed considerably over the past eight years. Noteworthy changes include the enactment of the *Crown Forest Sustainability Act* and changes in the roles and responsibilities between MNR and the forest industry.

Public stakeholders have become more involved in forest management planning and, together with forest managers, have broadened their perspective from timber management to forest management. The public has also made use of the courts and legislation such as the *Environmental Bill of Rights* to request changes in forest management planning.

Public consultation in preparing this review began nearly two years ago and has recently resulted in an opportunity for the public to comment on a draft version of this EA review. These comments have played an important role in shaping the recommendations contained within this final version.

In this review, MNR is seeking approval for forest management planning, comprising the interrelated activities of access, harvest, renewal, maintenance and their planning as provided for under the *Crown Forest Sustainability Act*, its regulations and manuals, on Crown lands on management units in the *Area of the Undertaking*.

In its 1994 decision, the Environmental Assessment Board set out 115 terms and conditions of approval. MNR has carefully tracked how each of these terms and conditions has been addressed in this review, together with rationale for recommended changes. Most of these terms and conditions deal with specific requirements in preparing a forest management plan. Changes are recommended to ensure the EA Approval and the Forest Management Planning (FMP) Manual complement one another. The planning terms and conditions have also been repackaged by subject areas for clarity and ease of use by practitioners.

MNR is recommending changes to move from a five-year FMP to a ten-year FMP with two, five-year operational terms. Despite this change in plan period, the forest management planning components of the past remain in place.

The roles and responsibilities of Local Citizens Committees and Registered Professional Foresters are planned to continue, and MNR is recommending improvements to Aboriginal consultation that provide Aboriginal communities the opportunity to customize a forest management planning consultation process that meets their local needs.

MNR recognizes that local issues will continue to require resolution in the course of preparing a FMP and recommends a continuation of the established issue resolution process, particularly prior to a request for an individual environmental assessment being made to the Ministry of Environment and Energy. MNR also recognizes the importance of forest, fish and wildlife inventories to be used in forest management planning and recommends that efforts in collecting this information continue. Likewise, the requirement to prepare values maps and to prepare an Aboriginal Background Information Report will continue.

Changes to access planning are recommended, to recognize the role of the federal Department of Fisheries and Oceans in approving water crossings and to speak to specific planning requirements for three categories of roads: primary, branch and operational roads.

With the move to a ten-year forest management plan, areas where harvest, renewal and maintenance operations will take place will now be identified for a ten-year period. Silviculture ground rules will continue to describe the kinds of silvicultural treatments that will take place on the areas where forest operations occur, through the application of preferred silvicultural treatment packages.

Special planning provisions will continue to be followed with respect to planning for prescribed burns, and the aerial application of herbicides and insecticides. Likewise, each five-year operational term of a FMP will continue to contain prescriptions for the protection of values identified as Areas of Concern.

MNR is recommending improvements to the planning of operations for the protection of Aboriginal values by requiring the production of a Report on Protection of Identified Aboriginal Values that speaks to how Aboriginal hunting, fishing, trapping and gathering activities have been addressed in the forest management plan.

MNR recommends improved analysis of past renewal and tending operations to rationalize the level of these operations and their associated expenditures in each forest management plan. Forest management plans will also continue to be required to describe planning provisions for monitoring forest operations.

The former planning provisions for amending forest management plans via major, minor and administrative categories of amendments are recommended to continue. Provisions for the use of contingency plans will also continue, and MNR provides a description of circumstances that may require the preparation of a contingency plan. Special planning provisions for the preparation of an insect pest management program will continue, as will requirements for the preparation of Annual Work Schedules.

Changes to management unit annual reporting are recommended to provide a cumulative progress report on activities undertaken on the management unit, relative to those described in the forest management plan. MNR recommends enhanced reporting requirements for Years 3, 7, and 10 to make use of these annual reports as background information in the preparation of forest management plans and five-year operational plans.

Recommendations describe planning requirements for the monitoring of forest operations, silvicultural effectiveness and wildlife populations. MNR will also continue with a provincial program of independent forest audits to assess forest management performance, and will provide to the legislature a Provincial Annual Report on Forest Management, as well as a State of the Forest Report as required under the *Crown Forest Sustainability Act*.

MNR recommends continued negotiations with Aboriginal peoples in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management planning. Regional Advisory Committees, the Provincial Forest Policy Committee and the Provincial Forest Technical Committee will continue to advise MNR on forest management planning, forest policy and provincial implementation manuals (forest management guides) used in forest management planning, respectively.

Clearcut harvest operations have proven to be a subject of public attention both before and after the EA Board's decision. MNR is recommending that clearcut harvest operations follow the direction and standards provided in the implementation manuals for emulating natural disturbance patterns. MNR has set a new standard recently that requires 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes St. Lawrence Forest Region to be less than 260 hectares in size.

Science and information play a critical role in forest management planning. MNR recommends the continued development of information management systems, a forest ecosystem classification system, a growth and yield program and long-term studies examining the effects of full-tree harvest and full-tree chipping.

The EA Board required MNR to undertake a number of initiatives regarding the identification of areas of natural and scientific interest, the preparation of an old growth policy and a roadless wilderness policy, and public involvement in revisions to district land use guidelines. These initiatives have been completed, or in the case of an old growth policy will be completed during the term of this EA Approval, and are not recommended for continuation. The EA Board also required the completion and updating of a timber production policy. This requirement has been met through the production of a forest resource assessment policy, which will continue to be updated and reported upon.

MNR will continue professional and technical training programs and will work in partnership with stakeholders and supporting organizations in administering and delivering educational programs.

MNR recommends that the extension to and amendments of this EA Approval come into effect on the latter of May 19, 2003 or the date of final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval. MNR is recommending no fixed expiry date to the term of the EA Approval, but is recommending a process to allow for its amendment, as may be proposed by MNR, the Ministry of Environment and Energy and the public.

Amendments to the Forest Management Planning Manual will be proposed by MNR within one year after the date when the extension and amendments of this EA Approval takes effect. All other terms and conditions described in this review are recommended to take effect immediately, unless otherwise specified.

MNR believes the public should have the opportunity to examine records relating to the Timber Class EA hearings and recommends that these records continue to be maintained by MNR and the Ministry of Environment and Energy. The public should also be informed as to the ongoing operation of the EA Approval, and MNR is recommending the preparation of a Five-Year EA Report to serve that purpose.

This review also includes a section consolidating all of MNR's recommended terms and conditions for extension and amendments of the Class EA Approval.

As part of conducting this review, MNR examined complete records on a variety of topics as required by the original term and condition 114. This information is summarized in the form of Progress Reports. In addition, MNR has provided a progress report on term and condition 77, regarding negotiations with Aboriginal peoples for economic development opportunities in forestry.

Under separate cover, MNR has also provided the State of the Forest Report, 2001, in accordance with the original term and condition 114.

SOMMAIRE

Le ministère des Richesses naturelles (MRN) recommande de prolonger l'Évaluation environnementale de portée générale du ministère des Richesses naturelles sur la gestion du bois d'œuvre des terres de la Couronne de l'Ontario et d'y apporter des modifications sous réserve des conditions décrites dans cet examen de l'Évaluation environnementale (ÉE)de portée générale sur la gestion du bois d'œuvre.

Cet examen de l'ÉE sur la gestion du bois d'œuvre a été réalisé en conformité avec la *Loi sur les évaluations environnementales* et la décision de la Commission des évaluations environnementales publiée le 20 avril 1994 à l'égard de l'Évaluation environnementale de portée générale du ministère des Richesses naturelles sur la gestion du bois d'œuvre des terres de la Couronne de l'Ontario. Les modalités précises de cet examen sont énoncées dans la condition 114 de cette décision.

En huit ans, le contexte de la gestion forestière en Ontario a subi de profondes modifications. Au nombre de ces changements, citons la promulgation de la *Loi sur la durabilité des forêts de la Couronne* et les nouveaux rôles et responsabilités assumés par le MRN et l'industrie forestière.

Le public participe davantage à la planification de la gestion forestière et, tout comme celle des gestionnaires forestiers, la perspective de ces intervenants s'est élargie pour passer de la gestion du bois à celle des forêts. Par ailleurs, la population a eu recours aux tribunaux et aux lois telles que la *Charte des droits environnementaux* pour demander que soient apportées des modifications à la planification de la gestion forestière.

Commencées il y a environ deux ans, les consultations publiques, destinées à la préparation de cet examen, ont donné l'occasion à la population de donner son opinion sur l'ébauche de cet examen de l'ÉE. Les commentaires recueillis ont tenu une place importante dans la formulation des recommandations présentées dans cette version finale.

Dans cet examen, le MRN sollicite l'approbation de la planification de la gestion forestière, y compris les activités interdépendantes relatives à l'accès, la récolte, la régénération, l'entretien et leur planification en conformité avec les dispositions de la *Loi sur la durabilité des forêts de la Couronne*, ses règlements et ses manuels, entreprises sur les terres de la Couronne appartenant à des unités de gestion situées dans la zone visée par le projet.

Dans sa décision de 1994, la Commission des évaluations environnementales a énoncé 115 conditions d'approbation. Le MRN a diligemment vérifié que chacune de ces conditions a été abordée dans l'examen et que les modifications recommandées s'accompagnent d'une justification. Pour la plupart, les conditions portent sur des exigences précises relativement à la préparation d'un plan de gestion forestière. Les modifications sont recommandées dans le but d'harmoniser les dispositions de l'Approbation de l'ÉE et du Manuel de planification de la gestion forestière. Les conditions visant la planification ont été reclassées par domaines dans un souci de clarté et de facilité d'emploi.

Le MRN recommande de passer d'un plan de gestion forestière de 5 ans à un plan de gestion forestière de 10 ans composé de deux périodes d'exploitation de cinq ans. Même si la durée de la période d'application change, les composantes de la planification de la gestion forestière demeurent inchangées.

Les Comités locaux de citoyens et les forestiers professionnels inscrits continueront à assumer les mêmes rôles et responsabilités qu'auparavant; le MRN recommande d'améliorer les consultations avec les Autochtones pour leur donner l'occasion de proposer un mécanisme de consultation visant la planification de la gestion forestière qui réponde aux besoins de la collectivité locale.

Le MRN reconnaît que les enjeux à l'échelle locale continueront à faire l'objet de résolutions au cours de la préparation du plan de gestion forestière et recommande que se poursuive le mécanisme de résolution des questions litigieuses, particulièrement avant qu'une demande d'évaluation environnementale individuelle soit adressée au ministère de l'Environnement et de l'Énergie. Reconnaissant la place que tiennent dans la planification de la gestion forestière les inventaires de la forêt, des poissons et des espèces sauvages, le MRN recommande que continuent les efforts de collecte de ces renseignements. Parallèlement, on continuera à préparer des cartes des ressources et des rapports d'information sur les Autochtones.

On recommande de modifier la planification des voies d'accès, non seulement pour reconnaître la place tenue par le ministère fédéral des Pêches et des Océans dans l'approbation des traverses d'eau mais aussi pour aborder les exigences précises en matière de planification relativement aux trois catégories de routes : principales, secondaires et opérationnelles.

Vu le passage au plan de gestion forestière de dix ans, les activités de récolte de bois, de régénération et d'entretien seront prévues pour la période de dix ans. Les règles de base relatives à la sylviculture continueront à décrire les traitements sylvicoles à appliquer dans les zones d'aménagement forestier, et notamment les méthodes privilégiées de soins sylvicoles.

On continuera à observer des dispositions spéciales en matière de planification pour les brûlages dirigés et l'application par voie aérienne d'herbicides et d'insecticides. Par ailleurs, chaque tranche de cinq ans du plan de gestion forestière continuera à prévoir des prescriptions visant la protection des ressources se trouvant dans les zones sensibles.

Le MRN recommande d'améliorer la planification des activités de sorte à mieux protéger les ressources autochtones et, notamment, en exigeant que soit rédigé un rapport sur la protection des ressources autochtones qui indique clairement comment ont été abordés dans le plan de gestion forestière les activités de chasse, pêche, piégeage et cueillette des Autochtones.

Le MRN recommande d'améliorer l'analyse rétrospective des activités de régénération et de soins sylvicoles pour que dans chaque plan de gestion forestière soient rationalisés l'intensité de ces opérations et les frais associés. Les plans de gestion forestière continueront à décrire les modalités prévues pour assurer la surveillance des opérations forestières.

On recommande de continuer l'application des anciennes dispositions visant la classification des modifications apportées aux plans de gestion forestière par catégorie, soit majeure, mineure et administrative. On continuera à prévoir le recours à des plans d'urgence et le MRN décrit les circonstances qui dictent la préparation d'un plan d'urgence. On continuera à prévoir des dispositions pour la préparation d'un programme de lutte contre les insectes ravageurs, ainsi que la préparation des plans de travail annuels.

On recommande d'apporter des modifications aux rapports annuels sur les unités de gestion pour garantir que soit rédigé un rapport cumulatif sur l'avancement des activités entreprises dans l'unité de gestion, comparativement à celles décrites dans le plan de gestion forestière. Le MRN recommande de prévoir des rapports plus perfectionnés pour la 3^e^, 7^e^ et 10^e^ année et d'avoir recours à ces renseignements généraux lors de la préparation des plans de gestion forestière et des plans d'exploitation de cinq ans.

Les recommandations énoncent les dispositions en matière de planification de la surveillance des opérations forestières, des résultats des soins sylvicoles et des populations d'espèces sauvages. Le MRN continuera aussi à appliquer son programme provincial de vérification indépendante des forêts pour évaluer les résultats de la gestion forestière. Il présentera à l'Assemblée législative un rapport provincial annuel sur la gestion forestière, ainsi que le rapport État de l'Accord sur les forêts de l'Ontario en vertu de la *Loi sur la durabilité des forêts de la Couronne*.

Le MRN recommande de continuer les pourparlers avec les peuples autochtones dans le but d'aboutir à une formule plus équitable pour leur participation aux fruits de la planification de la gestion forestière. Les comités consultatifs régionaux, le Comité provincial des politiques forestières et le Comité provincial des techniques forestières continueront à dispenser des conseils aux MRN dans les domaines suivants : planification de la gestion forestière, politiques forestières et manuels provinciaux de mise en place utilisés respectivement dans la planification de la gestion forestière.

Les activités de coupe à blanc ont suscité l'attention du public, tant avant qu'après la décision de la Commission des évaluations environnementales. Le MRN recommande que les opérations de coupe à blanc observent l'orientation et les normes énoncées dans les manuels relativement à l'imitation des configurations de perturbations naturelles. Récemment, le MRN a établi une nouvelle norme selon laquelle 80 % des coupes à blanc effectuées dans la région de la forêt boréale et 90 % de celles dans la région de la forêt des Grands Lacs et du St.-Laurent doivent couvrir une étendue inférieure à 260 hectares.

Les données scientifiques et générales sont essentielles à la planification de la gestion forestière. Le MRN recommande de continuer à élaborer les initiatives suivantes : systèmes de gestion de l'information, classification des écosystèmes forestiers, programme de croissance et de rendement, et études de longue durée destinées à examiner les effets de l'exploitation par arbres entiers et de la production de copeaux d'arbres entiers.

La Commission des évaluations environnementales a ordonné au MRN d'entreprendre plusieurs initiatives : déterminer les zones d'intérêt naturel et scientifique, préparer une politique visant les vieux peuplements et une politique visant l'absence de routes dans les régions sauvages, et faire participer la population aux révisions des directives sur l'aménagement du territoire du district. Ces initiatives étant achevées et, dans le cas de la politique sur les vieux peuplements qui sera achever pendant la durée de cette approbation, on ne recommande pas de les continuer. La Commission des évaluations environnementales a aussi exigé que soit mise à jour la politique visant la production de bois d'œuvre. Cette condition a été remplie puisque le MRN a élaboré une politique visant l'évaluation des ressources forestières qui continuera à faire l'objet de mises à jour et de rapports.

Le MRN continuera à dispenser des programmes de formation professionnelle et technique et travaillera, en collaboration avec les intervenants et les organismes intéressés, à l'administration et la prestation des programmes éducatifs.

Le MRN recommande de mettre en vigueur la prolongation de cette Approbation et ses modifications, soit le 19 mai 2003 soit à la date où le Ministre de l'Environnement et de l'Énergie a approuvé la prolongation et les modifications apportées à cette Approbation de l'ÉE, la date retenue étant celle qui tombe le plus tard. Le MRN ne recommande pas de fixer une date d'expiration à la période de l'Approbation de l'ÉE, par contre, il recommande de prévoir un mécanisme visant la mise en place de modifications proposées par le MRN, le ministère de l'Environnement et de l'Énergie ou le public.

Le MRN proposera des modifications à apporter au Manuel de planification de la gestion forestière dans l'espace d'un an après la date à laquelle la prolongation et les modifications apportées à cette Approbation de l'ÉE prennent effet. On recommande que toutes les autres conditions décrites dans cet examen entrent en vigueur immédiatement, sauf indication contraire.

Le MRN est d'avis que le public doit avoir l'occasion d'examiner les dossiers des audiences sur l'Évaluation environnementale de portée générale sur la gestion du bois d'œuvre et recommande que ces dossiers continuent à être retenus au MRN et au ministère de l'Environnement et de l'Énergie. Le public étant susceptible de s'intéresser aux activités courantes de l'Approbation de l'ÉE, le MRN recommande la rédaction d'un rapport aux cinq ans.

Cet examen inclut aussi un chapitre où sont consolidées toutes les conditions recommandées par le MRN visant la prolongation et les modifications à apporter à l'Approbation de l'ÉE.

Dans le cadre des travaux de cet examen, le MRN a étudié les dossiers compilés sur divers sujets conformément à la condition 114. Cette information est présentée sous forme de sommaire dans un rapport. Par ailleurs, le MRN a préparé un rapport sur les travaux relatifs à la condition 77, concernant les pourparlers avec les peuples autochtones sur les débouchés économiques dans le secteur forestier.

Dans un document séparé, le MRN a aussi préparé l'État de l'Accord sur les forêts de l'Ontario (2001), en conformité avec la condition 114.

1.0 CONTEXT FOR THE TIMBER CLASS EA REVIEW

1.1 Introduction

On April 5, 1994, after four and a half years of public hearings, the Environmental Assessment Board (EA Board) accepted the Ministry of Natural Resources' Class Environmental Assessment for Timber Management on Crown Lands in Ontario (MNR 1987a) and gave approval to proceed with the undertaking, subject to 115 terms and conditions (T&Cs). The EA Board's Reasons for Decision and Decision: Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario (EA Decision; Koven and Martel 1994) was released on April 20, 1994. The *Environmental Assessment Act* (1980) provided for a 28-day period in which the government could review the decision. There were no modifications to the decision during this time. The term of the EA Board's approval therefore commenced on May 19, 1994 and remains in effect for nine years following that date.

One of the EA Board's terms and conditions (T&C 114) required the Ministry of Natural Resources (MNR) to undertake a review of the undertaking in the eighth year, and to make recommendations regarding an extension and amendment of the EA Approval. That review is to be submitted to the Minister of Environment and Energy and is to be made available to the public at the same time. Extension and amendments to the EA Approval will enable forest management to continue on Ontario's Crown lands.

T&C 114, shown below, describes the supporting information to be included as part of this review. The required review has been completed and this document summarizes the information and findings used in the review and makes recommendations regarding an extension and amendments to the EA Approval.

This review is divided into eight sections. Section 1.0 provides the context for the eighth year review, including a brief history of the EA Approval and public consultation leading up to this review.

Section 2.0 provides a description of the undertaking and an index of where the original terms and conditions are discussed in various sections of this review.

Section 3.0 describes MNR's experience to date in implementing the original terms and conditions and makes recommendations for amendments and additions to those terms and conditions.

Section 4.0 is a listing of the new terms and conditions recommended by MNR, brought forward from Section 3.0.

Section 5.0 provides records and progress reports required by T&C 114 as well as additional progress reports on other matters that MNR considers appropriate for this review.

Section 6.0 references the most recent five-year State of the Forest Report (MNR 2002a), and is provided under separate cover.

Section 7.0 is a glossary of terms used in this review.

Section 8.0 identifies publications referenced in this review.

To assist the reader, excerpts from the original terms and conditions of the EA Board decision are provided in text boxes such as that found below and throughout Section 3.0.

T&C 114

(a) During the eight year of this approval, MNR shall undertake a review of this undertaking and submit that review to the Minister of Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:

- *(i) A complete record of all amendments to the approval pursuant to Condition 112 for the undertaking during the term of this approval;*
- *(ii) A complete record of all amendments to Timber Management Plans detailing their categorization as administrative, minor or major as set out in Condition 67 and Appendix 13;*
- *(iii) A complete record of all bump-up requests, and their disposition, during the term of this approval;*
- *(iv) The most recent five-year "State of the Forest" report, which is described in Condition 84 and Appendix 22;*
- *(v) Progress reports on the studies and programs which are described in Conditions 24, 27, 52(e), 80, 81, 93 to 110 and Appendix 19;*
- *(vi) Any additional documentation which MNR considers to be appropriate or necessary to support its recommendations for an extension of the approval of the undertaking;*
- *(vii) An overview of the success and failure of public consultation reported by:*
  - *Local Citizens Committees and contained in supplementary documentation of Timber Management Plans,*
  - *Any similar statement resulting from the native consultation process, and*
  - *The issue resolution process;*
- *(viii) a complete record of all Contingency Plans as set out in Condition 66 and Appendix 12;*
- *(ix) a complete record of major problems identified through independent audit program as provided in Condition 86; and*
- *(x) a complete record of estimated and actual spending to achieve regeneration objectives as provided for in Condition 38(a); Appendix 8, section 1(a)(iv); Appendix 18, section 1(o); Appendix 20, section 1(g); and Appendix 22, section 1(k).*

(b) The public shall be provided 60 days after the report is made public to make written comments to the Minister of Environment and Energy on the review documentation and any recommendations prepared by MNR.

(c) The Minister of Environment and Energy will determine whether the Class EA approval shall be extended beyond the term of this approval no later than six months after receiving MNR's review and recommendations.

1.2 Background

1.2.1 The Environmental Assessment Act and the Timber Class EA

In 1975 the Ontario government passed the *Environmental Assessment Act* (1975), which requires proponents of any undertaking that might affect the environment, to carry out an environmental assessment of their endeavour. The stated purpose of the Act is "the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment" (Environmental Assessment Act 1975, Section 2). The environment was defined to include air, land, water, plant and animal life, including humans, as well as social, economic and cultural conditions. The Crown was bound by the *Environmental Assessment Act.*

When an environmental assessment was required under the *Environmental Assessment Act,* it was to include descriptions of subjects such as the purpose of the undertaking, the description and rationale for the undertaking, the alternative methods, the alternatives to the undertaking, the environment, effects and the actions that may be necessary to address those effects.

The MNR was responsible for timber management on 385,000 square kilometres of Crown lands in the province. In the late 1970s, MNR began to design a process for approval under the Act, and on December 23, 1985, submitted its Class Environmental Assessment for Timber Management on Crown Lands in Ontario (MNR 1985) to the Minister of the Environment. This was subsequently revised and resubmitted June 1987. During the interim, MNR operated under a series of exemption orders.

The MNR has used a class environmental assessment approach for this undertaking. The undertaking of timber management was defined as the interrelated activities of access, harvest, renewal and maintenance on Crown land in forest management units within the Area of the Undertaking. The purpose of the undertaking was described as providing "a continuous and predictable supply of wood for Ontario's forest products industry" (MNR, 1987, Part 1, Page 8).

In December 1987, the Minister of Environment and Energy sent the Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario to public hearings before the Environmental Assessment Board.

1.2.2 Public Hearings - 1988 to 1992

The EA Board began public hearings on the Class Environmental Assessment for Timber Management on Crown Lands in Ontario in Thunder Bay on May 10, 1988. The EA hearings continued for four and a half years, ending on November 12, 1992. The EA hearings took place in 15 locations and involved dozens of intervenors and hundreds of support people. These environmental assessment hearings were a long and expensive process.

In addition to MNR, the EA hearings were attended by five full-time intervenor groups and many part-time intervenors. Hundreds of witnesses presented thousands of exhibits and the EA hearing record includes 70,000 pages of daily-recorded transcripts. During community hearings, the EA Board went to great lengths to enable people across Ontario to put forward their views on timber management in an informal setting. Over 500 presenters took advantage of these and other opportunities to appear before the EA Board.

In its decision the EA Board stated that "The hearing record represents the cumulative knowledge, opinions and wisdom of the most expert and authoritative people who have devoted their careers and lives to the task of understanding and managing Ontario's forests" (Koven and Martel 1994, Page 20). The EA Board also commented that "The environmental assessment process and the hearing gave voice to everyone's concerns" (Koven and Martel 1994, Page 3).

1.2.3 The EA Board's 1994 Ruling

The Environmental Assessment Board began its Decision Summary by stating a definitive "yes" to the question, "Can timber management planning for building forest access roads, cutting timber, regenerating the new forest and tending and protecting it in over 385,000 square kilometres of public lands in northern Ontario pass the test of approval under the *Environmental Assessment Act*?" (Koven and Martel 1994, Page 3).

Thus on April 5, 1994, the EA Board gave its approval for the undertaking to proceed. It placed a total of 115 terms and conditions on its approval. The EA Board's approval was to remain in effect for nine years and "be tested in the forest" (Koven and Martel 1994, Page 3).

The EA Board recognized the inevitability of conflict between the disparate interests of consumptive and non-consumptive forest users, conflicts that were aired then and which continue today. But in summarizing its decision, the EA Board expressed its view that all of the philosophies held by the people of Ontario about their forest are legitimate, and that accommodation between the extreme ends of the debate between protecting and using the forest, is possible. MNR shares this view.

1.2.4 Subsequent Meetings of the EA Board

T&C 90 required MNR to produce a draft planning manual within six months of the date of approval, and to provide the Ministry of Environment and Energy and other interested persons with an opportunity to review and comment on the draft within three months. MNR produced a draft planning manual within six months and made it available for a three-month review. MNR then revised the manual and made it available for an additional one-month review period, at which time, parties had an opportunity to make written submissions to the EA Board.

The EA Board reconvened to receive submissions about whether the conditions of approval were properly described in MNR's revised draft Forest Management Planning Manual for Ontario's Crown Forests.

The EA Board met with parties to hear their comments on the draft. The EA Board also heard submissions from several parties on related topics, including forest management, negotiations with Aboriginal communities, timber harvest levels, and future developments.

On October 10, 1995 the EA Board released a Report on the Approval of the Class Environmental Assessment for Timber Management on Crown Lands in Ontario (Koven and Martel 1995). In that report the EA Board stated "This ends any further involvement by the panel or the Environmental Assessment Board as required by the Class EA approval" (Koven and Martel 1995, Page 22.)

1.2.5 Judicial Review and Environmental Bill of Rights Investigations

Members of the public and stakeholder groups have made use of opportunities both through the courts and the provisions of the *Environmental Bill of Rights* (1993) to take issue with MNR's implementation of the EA Approval. This has resulted in one judicial review and requests, under the *Environmental Bill of Rights*, for four environmental investigations.

Judicial Review

In 1996, an application for a judicial review [*Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* 1996] was commenced challenging the MNR's approval of six forest management plans (FMPs) on the grounds that they did not meet the sustainability requirements of the *Crown Forest Sustainability Act* (1994), and that they violated eight terms and conditions of the EA Approval.

The Ontario Divisional Court found that the phase-in provisions found in the Forest Management Planning Manual for Ontario's Crown Forests (FMP Manual: MNR 1996a) were *ultra vires* the Act and thus invalid. Consequently, three of the forest management plans that had relied on the phase-in provisions of the FMP Manual were also found to be invalid. In addition, the Court found that MNR had breached the following seven terms and conditions of the EA Approval:

1. Condition 4(a)(ii), in that the Regional Advisory Committees had not been established;
2. Condition 4(b), in that the Provincial Policy Committee had not met or had not been meeting twice annually as required by Appendix 1 A s.2 Part D;
3. Condition 61, in that two forest management plans lacked certification that they complied with the terms of the EA Approval and the FMP Manual;
4. Condition 65(c), in that forest management plans were not available in Toronto at the time the application was brought;
5. Appendix 1, Section D.6(b), in that a Local Citizens' Committee Report was not included with the plan;
6. Condition 91, in that a brochure outlining the planning process and the public role in it had not been distributed within one year of the approval;
7. Condition 94(c), in that, while Pine Marten and Pileated Woodpecker Guidelines (Watt et al. 1996, Naylor et al.1996) had been prepared, they had not been implemented in the forest management plans prepared in 1996.

MNR appealed the Divisional Court decision to the Ontario Court of Appeal.

In the interim, between the decision and the hearing of the appeal, MNR revised the three plans in question so that they did conform. Also, as discussed below, MNR took steps to ensure that all six of the terms and conditions of the EA Approval were met. A brochure had been produced outlining the planning process, and was made available in English, French and Oji-Cree by the time of or just after the Divisional Court hearing. The Regional Advisory Committees were formed and have met regularly since. A meeting of the Provincial Forest Policy Committee was convened and has met at least twice annually since the Divisional Court's decision. Forest management plans were made available, and continue to be made available in Toronto since the date of the EA hearing.

When revising the three plans in question, MNR ensured that the new pine marten and pileated woodpecker guidelines were followed.

Consequently, MNR concentrated its appeal on whether the phase-in provisions of the FMP Manual were *intra vires* the *Crown Forest Sustainability Act* and thus valid. The Ministry did not argue whether the Divisional Court had erred in its decision with respect to the Timber Class EA. The Court of Appeal found that the phase-in provisions found in the FMP Manual were *intra vires* the Act, as sought by MNR.

Also at issue in the judicial review was MNR's compliance with T&C 103(b), dealing with old growth forests. MNR's approach to providing management direction through a number of documents was contested by the appellants, who argued that management direction should have been consolidated into one discrete document. The Court did not make any findings of fact on this issue or on whether MNR was in compliance with T&C 103(b) due to the vagueness of the term and condition wording.

Environmental Bill of Rights Investigations

The *Environmental Bill of Rights* contains certain provisions for the public to challenge the government related to environmental law and policy. These provisions include the right for the public to request a ministry to review a policy, Act, regulation or instrument if the public believes the environment is not being adequately protected. These provisions also allow the public to request a ministry to investigate allegations that an environmental Act, regulation or instrument has been contravened. Both reviews and investigations require a government ministry to respond to the application. The Environmental Commissioner of Ontario serves as the clearinghouse for applications and also reviews the ministry's receipt, handling and disposition of applications. The Environmental Commissioners of Ontario review is published as part of the annual report submitted to the Ontario Legislature.

In 1999, the Ministry of Environment considered four requests for investigations under the *Environmental Bill of Rights* regarding MNR's compliance with the terms and conditions of the EA Approval.

In Application #198009, the Ministry of the Environment completed an investigation into alleged contravention by MNR of T&Cs 23 and 77 regarding identification of management objectives for non-timber values and Aboriginal economic opportunities. The Ministry of the Environment determined that MNR was in compliance with T&C 77 and that the applicants had not raised any issues with respect to T&C 23.

In Application #198010, the Ministry of the Environment completed an investigation into alleged contravention by MNR of T&Cs 77, 82 and 106 regarding Aboriginal economic opportunities, reporting on those in the annual reports and development of a policy on roadless wilderness areas. The Ministry of the Environment focused its investigation on T&C 77 and determined that MNR was in compliance with the term and condition and that annual reports had included a discussion on progress under T&C 77.

In Application #199001, the Ministry of the Environment denied an investigation into alleged contravention by MNR of T&C 106 regarding development of a policy on roadless wilderness areas. The Ministry of the Environment determined that MNR was in compliance with this term and condition, and had submitted Ontario's Approach to Wilderness within three years of approval of the Timber Class EA as required by the term and condition.

In Application #199015, the Ministry of the Environment completed an investigation into alleged contravention by MNR of T&Cs 27, 94(b), 82 and Appendix 20 regarding clearcut harvesting, environmental guidelines, annual reports. The Ministry of the Environment determined that MNR was in compliance with these terms and conditions.

1.3 Current Context

The EA Board's nine-year term of approval and its 115 terms and conditions were set in 1994, based on the evidence presented at the EA hearings and the EA Board's assessment of what was required at the time to make timber management environmentally acceptable. Since then, important changes have overtaken the EA Board's decisions that are critical to this Timber Class EA Review and to MNR's recommendations for extension and amendments.

The landmark event that brought about most of this change was the *Crown Forest Sustainability Act*. The Act was passed into law in December 1994 and came into effect on April 1, 1995, nearly one year after the EA Board's decision. Binding the Crown as well as the forest industry, the new Act provides a more rigorous regime under which forest management must be conducted than did its predecessor, the *Crown Timber Act* (1990). For the first time, the *Crown Forest Sustainability Act* created a direct link between forest management and forest sustainability, which is defined in the Act as "long term Crown forest health" (*Crown Forest Sustainability Act* 1994, Section 2). The new Act's stated purposes - "… to provide for the sustainability of Crown forests and, in accordance with that objective, to manage Crown forests to meet social, economic and environmental needs of present and future generations" (*Crown Forest Sustainability Act* 1994, Section 1) - are closely aligned with the stated purpose of the *Environmental Assessment Act* (1990).

The *Crown Forest Sustainability Act* brought about important change in how Ontario Crown forests are managed. It requires that all forest management activities be conducted in accordance with four regulated manuals, one of which, the FMP Manual, is the instrument for implementing 82 of the EA Approval's 115 terms and conditions. In 1995 the EA Board confirmed that the then-draft planning manual had satisfactorily incorporated the planning requirements of its terms and conditions of approval. The other three manuals regulate forest operations and silviculture, forest information and wood measurement. Unlike the permissive language of the former *Crown Timber Act*, the standards and requirements for forest management are set out directly in the *Crown Forest Sustainability Act* and these four associated manuals.

Fundamental change has also occurred in how the renewal of Ontario's Crown forests is financed. One of the EA Board's concerns had been MNR's decreasing financial commitment to regeneration, and the EA Board ordered conditions to report on silvicultural funding requirements and actual expenditures. Under the *Crown Forest Sustainability Act*, MNR went one step further. A Forest Renewal Trust was established to ensure that silvicultural funding would be sufficient to provide for forest renewal (*Crown Forest Sustainability Act* 1994, Section 2).

In addition, the Act provides for a Forestry Futures Trust to dedicate silvicultural funding in response to unforeseen events such as fires, natural damage and licensee insolvency; and for intensive stand management and other purposes specified by the Minister of Natural Resources (*Crown Forest Sustainability Act* 1994, Section 51). In both cases, funding is generated by a Crown charge that is paid by all forest resource licensees, and is directed into a trust that is managed and administered by an independent trustee.

To ensure that these silvicultural activities are effective, the *Crown Forest Sustainability Act* made it a legal requirement for sustainable forest licensees to meet regeneration and other silvicultural standards (*Crown Forest Sustainability Act* 1994, Section 26). Since1996, MNR has been moving to place all of Ontario's management units under sustainable forest licence or similar arrangements. As of April 1, 2002, these arrangements were in place on 47 of Ontario's 54 management units.

On sustainable forest licences, the licensee carries out all of the forest management activities, but MNR retains authority, since all aspects of forest management are subject to MNR manuals and approvals, and all operations are subject to compliance inspections and reporting. The *Crown Forest Sustainability Act* also added to and strengthened existing enforcement provisions to deal more effectively with compliance, using a broad suite of mechanisms ranging from stop-work orders to fines up to one million dollars.

Public consultation and public involvement was a EA Board concern, and the subject of ten terms and conditions. Since then, the *Crown Forest Sustainability Act* has incorporated public consultation as a normal part of MNR business through its provisions for advisory committees, local citizens committees and public involvement in forest management planning [*Crown Forest Sustainability Act* 1994, sections 13, 14 and 68(3)(a)]. The *Environmental Bill of Rights* is another venue for public consultation that post-dates the EA Board's decision. MNR makes use of these mechanisms voluntarily, even in situations where it is not a legal requirement.

Accountability, by way of public reporting, was another matter addressed by the EA Board that has since been incorporated into legislation. T&C 84, which requires MNR to produce a State of the Forest Report every five years, is now also a requirement of the *Crown Forest Sustainability Act* and is binding upon MNR (*Crown Forest Sustainabiltiy Act* 1994, sections 22 and 4).

Other events, too, have overtaken the EA Board's decision. In July 1999, after the MNR's Lands for Life land use planning exercise and extensive public consultation, Ontario's Living Legacy Land Use Strategy (MNR 1999a) was announced. This was an MNR initiative to expand Ontario's parks and protected areas to comprise 12% of the Area of the Undertaking. In total, 378 new or expanded parks and protected areas, representing 2.4 million hectares of Crown land, have been added to the protected area system. There are also provisions to increase the number and potentially some of the sizes of these areas further. Logging, mining and hydroelectric development are not permitted uses within any of these new parks and protected areas.

The Ontario Forest Accord (MNR 1999b) was developed in conjunction with the Ontario Living Legacy Land Use Strategy. This accord is an historic agreement among the forest industry, the Partnership for Public Lands and the MNR supporting the expansion of Ontario's parks and protected areas. One of the 31 commitments contained in the accord called for a process to be developed for any permanent increase in future wood supply to be shared between increased wood supply for the forest industry and additional parks and protected areas. The Ontario Forest Accord also recommended improvements to forest management planning, modifications to the Timber Class EA, and support for related science activities. After the signing of the Accord, the Minister of Natural Resources named an advisory board to assist in its implementation.

These landmark events have resulted in the current forest management paradigm, and they are part of the current context in which MNR submits this Timber Class EA Review.

1.4 Public Consultation

Public consultation is a cornerstone in the management of Ontario's Crown forests. MNR has been listening to and learning from those who use and care about Ontario's forests. As stewards of Ontario's forests, MNR regularly seeks public input by consulting with stakeholders and the broader public.

Throughout the development of this submission, MNR has demonstrated its commitment to consultation by informing and involving the public and stakeholders. MNR has sought to strike the balance among the needs and interests of all those that derive value from sustainable forest management.

At the time of the EA hearings, public consultation was discretionary when changes to forest management policy were being considered.

When the EA hearings began, public involvement in resource management was in its infancy. The 30-year old *Crown Timber Act* provided the legislative basis for timber management in Ontario, however it contained no express provision for public consultation or involvement. The EA hearings provided the basis for parties to raise their concerns publicly about timber management planning. During that time, the public also demonstrated a growing interest in the science of forestry.

The EA Approval required MNR to adopt a clearly defined public consultation process for timber management planning that would be timely, responsive and accessible to all. Forest management in Ontario has been improved by involving the public in the development of policies in a more open and transparent decision-making process. Public and stakeholder input assists MNR in developing more responsive and effective policies, guidelines and manuals related to forest management planning.

1.4.1 Environmental Bill of Rights

The *Environmental Bill of Rights* provided a formal mechanism to inform and seek comment from the public about proposed changes to legislation, policies, regulations and other legal instruments that could have a significant effect on the environment. It also outlined a process to be followed when notifying the public of resulting decisions. MNR has made frequent use of the Environmental Registry as part of its communication and consultation efforts.

In many cases, including the development of this Timber Class EA Review, MNR makes use of the Environmental Registry on a voluntary basis. Opportunities for public participation in the forest management planning process are regularly posted through the registry. For example, in seeking extension and amendment of this EA Approval, MNR posted a discussion paper titled A Paper for Public Review Concerning the Extension and Amendment of the Environmental Assessment Act Approval for Forest Management on Crown Lands in Ontario (MNR 2002b).

1.4.2 Related Developments

Public advisory committees, established as a result of the EA Approval, have proven to be very beneficial in guiding forest management in Ontario. Since the EA hearings, public consultation and related mechanisms have continued to evolve in both forest management planning and land use planning. Three examples of additional public advisory committees not mandated by the EA Approval but contributing to this Timber Class EA Review are the Ontario Forest Accord Advisory Board, the Forest Management Planning Improvement Project and the Timber Class EA Subcommittee of the Provincial Forest Policy Committee.

Lands for Life, a new comprehensive land use planning process initiated in 1997, gave rise to the most extensive public consultation process for land use planning in Ontario's history. This process led to the Ontario Forest Accord, an historic agreement among MNR, a coalition of environmental groups and the forest industry. The accord sets out the conditions for the long-term advancement of interests among the parties and serves as a good example of collaboration among natural resource users. It also recommended improvements to forest management planning, modifications to the Timber Class EA, and support for related science activities.

In 1999, MNR initiated the Forest Management Planning Improvement Project, to provide field-level practitioners and other engaged stakeholders an early opportunity to identify short and long-term improvements to the forest management planning process. In 2001, MNR appointed a Timber Class EA Subcommittee of the Provincial Forest Policy Committee, to provide feedback and advice to MNR while preparing this submission.

1.4.3 Public Input in Preparing this Submission

MNR has been working with the public and stakeholders on an ongoing basis since the EA Board's decision in 1994. MNR has continuously involved the public and stakeholders in the development of policies and guidelines to improve the forest management planning process. Many of these improvements are evident in this submission.

To assist in preparing this Timber Class EA Review, MNR initiated the Forest Management Planning Improvement Project in 1999. This initiative brought together various parties involved in forest management planning in a series of meetings held across the province. Participants in this project included the forest industry, the environmental community, Aboriginal interests, and tourism and recreation interests. Following these meetings, a diverse project team with membership reflective of the stakeholders then developed recommendations for MNR to consider in improving forest management planning. Some Local Citizens Committee members, and members of Regional Advisory Committees actively participated throughout this process. The resulting recommendations have been a major contributor to MNR's planning proposals, found in Section 3.1 of this submission.

MNR also formed a subcommittee of the Provincial Forest Policy Committee to advise on the development of this Timber Class EA Review. The committee had broad membership, representing twelve different stakeholder groups. These members were asked to review material and provide MNR with feedback and advice in preparing this submission. This was done through open discussion at meetings where a range of views was heard. This committee was appointed in

November 2001 and has remained active throughout the development of this review. Their input substantially influenced the final submission.

MNR has also sought input and advice from the public through the use of the Environmental Registry, the release of a public discussion paper, the provision of public information centres across Ontario, one-on-one stakeholder meetings, and a web site information source.

In December 2001, MNR voluntarily posted on the Environmental Registry, A Paper for Public Review Concerning the Extension and Amendment of the Environmental Assessment Act Approval for Forest Management on Crown Lands in Ontario. This posting provided the public with a description of MNR's implementation of the requirements of the EA Approval and provided an overview of proposals for change to the EA Approval. An overview of the broader Timber Class EA Review process and a description of opportunities to provide input were identified. Approximately two months was provided to review and comment on MNR's proposals. The paper was also mailed directly to approximately 300 stakeholders and Aboriginal groups. The public was encouraged to review and comment on MNR's proposals and to attend public information centres.

In January and February 2002, MNR held a series of seven public information centres across the province in Dryden, Thunder Bay, Sault Ste. Marie, Timmins, North Bay, Peterborough and Guelph. These public information centres provided the public with the opportunity to engage MNR staff familiar with the contents of the public paper, MNR's implementation experience and proposals for change to the EA Approval. Locations of these information centres were chosen to provide a broad geographical coverage, accessing both urban and rural populations. These information centres were attended by over 250 people. Information packages, fact sheets and questionnaires were distributed to provide the public with additional information and an easy means to provide input to MNR.

MNR held two rounds of one-on-one consultations with various interested parties, government ministries and agencies across the province. The first round was held in the fall of 2001, the second in February and March of 2002. In all, more than 25 meetings were held. These meetings were an opportunity for stakeholders to discuss their implementation experience with the current EA Approval and provide advice on improvements.

As a result of all of the public consultation opportunities, MNR also received more than 100 written responses. MNR used the results of all of the consultation efforts to prepare a draft Timber Class EA Review that was produced on May 17th, 2002. Copies of this draft document were sent directly to over 300 stakeholders including environmental groups, the forest industry, First Nations and Aboriginal groups in the Area of the Undertaking, a variety of other interested government and non-government organizations and individuals.

A 30-day review period was provided to provide the public with an opportunity to review and comment on the draft Timber Class EA Review. Approximately 30 written responses were received from non-government organizations and Aboriginal groups. Comments were also received from a number of federal, provincial and municipal government organizations. These comments have been reviewed and have resulted in numerous changes to the content of this final submission. These changes include the following:

- More detail has been provided on the roles and responsibilities of Local Citizens Committee and the content of values maps;

- Efforts have been made to ensure consistency with the *Ontario Professional Foresters Act 2000* and the roles and responsibilities of Registered Professional Foresters in forest management planning;
- Minor changes have been made to the membership and function of public advisory committees;
- MNR has included a commitment regarding a regulation under the *Crown Forest Sustainability Act* with respect to independent forest audits;
- MNR has recommended new terms and conditions relating to a provincial wood supply strategy and horse logging.
- MNR has removed its proposal to allow for this EA Approval to be amended with respect to changes in the Area of the Undertaking.

Throughout the public consultation process, MNR developed and made available a web site that people could access to stay abreast of the Timber Class EA Review developments and provide input (MNR 2002c). The web site address was identified on communications material that was made available to the public and identified on the Environmental Registry in the posting of the public discussion paper. The web site includes:

- an overview of the required contents of the review and the main theme areas the public could expect to see proposed amendments;
- background information to assist the reader to understand environmental assessments and the need to renew the Timber Class EA Approval;
- a description of MNR's public discussion paper and a link to it as well as to other related publications and web sites;
- significant dates in the production and submission of the review;
- how readers could stay up to date on the review and provide input and advice on the preparation of the review;
- a listing of frequently asked questions and answers;
- electronic versions of the original EA Board decision of 1994, MNR's public discussion paper of December 2001 and MNR's draft Timber Class EA Review of May 2002; and
- information on how readers could send questions through the Internet.

The web site remains active and will continue to be a valuable communication mechanism and provides linkages to a variety of supporting information.

A copy of this final Timber Class EA Review is also available on this web site which can be found at the following address:

http://www.timberea.mnr.gov.on.ca

As a result of all of the public consultation opportunities, MNR also received more than 100 written responses. MNR has used the results of all of the consultation efforts to prepare a draft Timber Class EA Review submission.

2.0 THE UNDERTAKING

2.1 Description of the Undertaking

In its decision of April 5th, 1994, the EA Board gave approval to proceed with the undertaking of the Class Environmental Assessment for Timber Management on Crown Lands in Ontario. The undertaking for which approval was given was described by the EA Board as:

- "TIMBER MANAGEMENT PLANNING, comprising the interrelated activities of access, harvest, renewal, maintenance and their planning,
- on Crown lands on which timber management activities are carried out,
- on forest management units, in the area of the undertaking" (Koven and Martel 1994, Page 423).

Timber management for the purposes of the undertaking was described by the Ministry and approved by the EA Board as follows (Koven and Martel 1994, Page 55):

"Timber management consists of the following sequence of related activities:

(i) provision of access to harvestable timber;
(ii) harvest of the timber for transport to wood processing facilities;
(iii) renewal of that timber resource, which involves:
    (a) preparing the site for regeneration;
    (b) regenerating the timber by natural or artificial means;
(iv) maintenance of the timber resource, which involves:
    (a) tending operations to ensure successful growth of the new forest;
    (b) protection of the timber resource from insects and disease".

The undertaking approved by the EA Board included direction to move beyond narrow timber management into a broader approach. The EA Board, in its reasons for decision, directed MNR to implement improvements in new management techniques, such as addressing biological diversity, landscape management and wildlife habitat supply analysis. Specifically, the EA Board directed MNR to investigate the feasibility of integrated forest management and to implement improvements offered by these new management techniques, as they became available. The legislative delivery mechanism for these techniques is the *Crown Forest Sustainability Act,* and in particular the determinations of sustainability as set out in subsection 2(3) of the Act and the FMP Manual. In its supplementary decision of October 10th, 1995, the EA Board determined that the *Crown Forest Sustainability Act* did not appear to offend the Timber Class EA.

In other words, the undertaking as approved by the EA Board encompasses forest management as contemplated by the *Crown Forest Sustainability Act* and its regulated manuals. One of those manuals, the FMP Manual, was the subject of, and given approval in, the October 10, 1995 decision of the EA Board. Accordingly, forest management, as contemplated under the *Crown Forest Sustainability Act,* falls within the undertaking for which the EA Board gave its approval. Thus the undertaking for which approval has been given can be described as:

> forest management planning, comprising the interrelated activities of access, harvest, renewal, maintenance and their planning as provided for under the *Crown Forest*

Sustainability Act, its regulations and manuals, on Crown lands on management units in the Area of the Undertaking.

Table 1 provides a list of management unit names and numbers that corresponds to a map depicting the management units within the Area of the Undertaking, as of April 1, 2002, referred to as Figure 1.

Table 1. Management Units within the Area of the Undertaking, as of, April 1, 2002
(designated under the *Crown Forest Sustainabiltiy Act,* Section 7)

#	Management Unit Name	#	Management Unit Name
448	Algoma Forest	390	Nagagami Forest
451	Algonquin Park Forest	240	Nakina North Forest
444	Armstrong Forest	754	Nipissing Forest
220	Bancroft-Minden Forest	680	Northshore Forest
067	Big Pic Forest	241	Ogoki Forest
370	Black River Forest	780	Ottawa Valley Forest
178	Black Sturgeon Forest	851	Pic River Ojibway Forest
173	Brightsand Forest	765	Pineland-Martel Forest
175	Caribou Forest	840	Red Lake Forest
520	Cochrane	930	Romeo Malette Forest
405	Crossroute Forest	853	Sapawe Forest
177	Dog River-Matawin Forest	868	Shiningtree Forest
410	Driftwood Forest	040	Smooth Rock Falls Forest
535	Dryden Forest	210	Spanish Forest
174	English River Forest	030	Spruce River Forest
360	French-Severn Forest	889	Sudbury Forest
438	Gordon Cosens Forest	508	Superior Forest
601	Hearst Forest	898	Temagami
012	Iroquois Falls Forest	610	Timiskaming Forest
350	Kenogami Forest	900	Timmins
644	Kenora Forest	400	Timmins Forest
702	Lac Seul Forest	120	Trout Lake Forest
260	Lake Nipigon Forest	130	Wabigoon Forest
796	Lakehead Forest	949	Wawa Forest
565	Magpie Forest	490	Whiskey Jack Forest
140	Mazinaw-Lanark Forest	060	White River Forest
738	Moose River		

Figure 1.

2.2 Term and Condition Index

Table 2 is an index that provides the reader with a cross-reference between original terms and conditions and sections of this Timber Class EA Review.

Within Table 2, the left column lists the original 115 terms and conditions and 25 appendices found in the Timber Class EA Approval. The right column lists the corresponding sections of this Timber Class EA Review where they are discussed.

Table 2. Term and Condition Index

Term and Condition		Section	
Timber Management Plans			
1	Timber Management Plans - application of T&Cs	3.1.2 3.1.9	Forest Management Plans - General Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
2	Preparation of Timber Management Plans- Planning teams and public involvement	3.1.2	Forest Management Plans – General
Planning Teams			
3	Planning Teams - formation and composition	3.1.2 3.1.9	Forest Management Plans – General Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
Advisory Committees and Local Citizens Committees			
4	Local, Regional and Provincial Public Advisory Committees - role and function	3.1.2 3.1.3 3.5.1.1 3.5.1.2	Forest Management Plans – General Public and Aboriginal Consultation Regional Advisory Committees Provincial Level Advisory Committees
Public Notice Requirements for Timber Management			
5	Provincial List of Timber Management Plans	3.1.2	Forest Management Plans – General
6	Timber Management Plans - public notices	3.1.3 3.1.9 3.1.10	Public and Aboriginal Consultation Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Annual Operations
Public Consultation in Preparation of Timber Management Plans			
7	Public consultation - efforts	3.1.3	Public and Aboriginal Consultation
8	Public Consultation -stages and contents	3.1.3 3.1.9 3.1.10	Public and Aboriginal Consultation Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Annual Operations
9	Stage one	3.1.3	Public and Aboriginal Consultation
10	Stage two	3.1.3	Public and Aboriginal Consultation
11	Stage three	3.1.3	Public and Aboriginal Consultation
12	Stage four	3.1.3	Public and Aboriginal Consultation
13	Maps	3.1.3	Public and Aboriginal Consultation
14	Written responses	3.1.3	Public and Aboriginal Consultation
Background Information			
15	Forest Resource Inventory	3.1.5	Background Information and Management Unit Description
16	Fisheries and Wildlife Inventory	3.1.5	Background Information and Management Unit Description
17	Values Map	3.1.5 3.1.8	Background Information and Management Unit Description Planning of Harvest Renewal and Maintenance Operations

18	Operations Maps: Proposed and Past Harvest Operations	3.1.3 3.1.5	Public and Aboriginal Consultation Background Information and Management Unit Description
19	Native Background Information Report	3.1.5	Background Information and Management Unit Description
20	Implementation Manuals-use in Timber Management Planning	3.1.8 3.5.2.1	Planning of Harvest Renewal and Maintenance Operations Implementation Manuals Review and Revision
Contents of a Timber Management Plan			
21	Report of Past Forest Operations	3.1.5 3.1.11	Background Information and Management Unit Description Management Unit Annual Reporting
22	Timber Management Objectives and Strategies, Problems and Issues	3.1.6	Planning Long-term Management Direction
23	Non-timber values: Strategies, Problems and Issues	3.1.6	Planning Long-term Management Direction
24	Visual Resources	3.1.8 3.1.11 5.0	Planning of Harvest Renewal and Maintenance Operations Management Unit Annual Reporting Progress Reports
25	Silvicultural Ground Rules -by RPF, FEC	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
26	Silvicultural Ground Rules - content	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
27	Clearcuts	3.1.8 3.1.11 3.3.1 3.3.2 3.5.2.2 3.7.2 5.0	Planning of Harvest, Renewal and Maintenance Operations Management Unit Annual Reporting Provincial Annual Report on Forest Management State of the Forest Report Emulating Natural Disturbance Patterns Five-Year EA Report and Monitoring of this Timber Class EA Approval Progress Reports
28	Maximum Allowable Depletion	3.1.6	Planning Long-term Management Direction
29	Eligibility and Eligibility Criteria (Twenty-year Plan Period)	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
30	Primary Road Access - selected corridor, 20 yr.	3.1.7	Access Planning
31	Primary Road Access - alternative corridors, 20 yrs	3.1.7	Access Planning
32	Primary Road Access - documentation	3.1.7	Access Planning
33	Primary Road Access - river and lake drives	3.1.7	Access Planning
34	Harvest Operations Maps	3.1.3 3.1.8	Public and Aboriginal Consultation Planning of Harvest, Renewal and Maintenance Operations
35	Selection Criteria and Map	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
36	Harvest Forecast & Surplus	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
37	Harvest Operations and Insect Pest Management	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
38(a)	Renewal and Tending Forecast	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
38 (b), (c)	Renewal and harvest relationship; renewal and tending activities - planned versus required	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
39	Contingency Area	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
40	Silvicultural Ground Rules & Maps; Silvicultural Treatments of Special Public Interest	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
41	Area of Concern Prescriptions	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
42	Area of Concern Prescriptions - alternatives	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
43	Area of Concern Prescriptions - evaluation of alternatives	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
44	Area of Concern Prescriptions - documentation of non-concurrence	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
45	Fuelwood	3.1.8 3.1.10	Planning of Harvest, Renewal and Maintenance Operations Annual Operations

46	Primary and Secondary Road Locations (Five-year Plan Term)	3.1.7	Access Planning
47	Primary Road Locations (Five-year Plan Term)	3.1.7	Access Planning
48	Secondary Road Locations (Five-year Plan Term)-alternatives	3.1.7	Access Planning
49	Secondary Road Locations (Five-year Plan Term) - evaluation of alternatives	3.1.7	Access Planning
50	Primary and Secondary Roads (Five-year plan term) - Native Communities	3.1.7	Access Planning
51	Primary and Secondary Road Locations in Areas of Concern - alternatives	3.1.7	Access Planning
52 (a)-(d)	Primary and Secondary Road Locations in Areas of Concern - evaluation of alternatives	3.1.7	Access Planning
52 (e)	Primary and Secondary Road in Areas of Concern - Criteria for Water Crossing Removal	3.5.2.3 5.0	Criteria For Water Crossing Removal Progress Reports
53	Tertiary Roads Restrictions/Conditions	3.1.7	Access Planning
54	Flagging	3.1.7 3.1.8 3.1.10	Access Planning Planning of Harvest, Renewal and Maintenance Operations Annual Operations
55	Monitoring Provisions in Timber Management Plans	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
56	Supplementary Documentation	3.1.2	Forest Management Plans-General
57	Report on the Protection of Identified Native Values	3.1.8	Planning of Harvest Renewal and Maintenance Operations
58	Timber Management Plan Summaries	3.1.2	Forest Management Plans -General
59	Timber Management Plan Summaries - Index to Environmental Assessment Components	3.1.2	Forest Management Plans -General
Other Timber Management Planning and Operational Matters			
60	Plan Review and Approval - Preparation by Registered Professional Forester	3.1.2 3.1.9	Forest Management Plans - General Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
61	Plan Review and Approval - District Manager certification	3.1.2 3.1.9	Forest Management Plans -General Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
62	Plan Review and Approval - certification and approval	3.1.2 3.1.4	Forest Management Plans -General Issue Resolution and Bump-up
63	Plan Review and Approval - Regional Director Approval	3.1.2	Forest Management Plans -General
64	Issue Resolution Process	3.1.4	Issue Resolution and Bump-up
65	Access to Plan Documentation	3.1.3	Public and Aboriginal Consultation
66	Contingency Plans	3.1.9 5.0	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Progress Reports
67	Amendments to Timber Management Plans	3.1.9 5.0	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Progress Reports
68	Timber Management Plan Renewals	3.1.2	Forest Management Plans-General
69	Insect Pest Management Programs	3.1.9	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
70	Bump-up	3.1.4 3.1.9 5.0	Issue Resolution and Bump-up Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Progress Reports
71	Bump-up	3.1.4 3.1.9 5.0	Issue Resolution and Bump-up Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Progress Reports
72	Annual Work Schedules	3.1.10	Annual Operations
73	Prescribed Burns	3.1.10	Annual Operations
74	Aerial Herbicide and Insecticide Projects	3.1.10	Annual Operations
75	Advertisements for Tree Planting Jobs	3.1.10	Annual Operations

76	Operations Near Traplines	3.1.3 3.1.10 3.5.2.1	Public and Aboriginal Consultation Annual Operations Implementation Manuals Review and Revision
77	Negotiations with Aboriginal Groups	3.4	Negotiations with Aboriginal Peoples Provincial
Monitoring and Reporting			
78	Forest Management Unit Level - compliance monitoring	3.2.1.1	Forest Operations Inspections
79	Forest Management Unit Level - Annual Reports	3.1.11	Management Unit Annual Reporting
80	Provincial Level - long-term scientific studies	3.2.2.4 5.0	Monitoring Guideline Effectiveness Progress Reports
81	Provincial Level - Provincial Wildlife Population Monitoring	3.2.2.3 5.0	Wildlife Population Monitoring Progress Reports
82	Provincial Level - "Annual Report on Timber Management" to the Legislature	3.3.1	Provincial Annual Report on Forest Management
83	Provincial Level - annual pesticide use	3.1.11	Management Unit Annual Reporting
84	Provincial Level - "State of the Forest Report"	3.3.2 5.0	State of the Forest Report Progress Reports
85	Internal Operational Audits	3.2.2.1 5.0	Audit Program Progress Reports
86	Independent Audits	3.2.2.1 5.0	Audit Program Progress Reports
87	Forest Management Agreement Reviews	3.2.2.1 5.0	Audit Program Progress Reports
88	Investigation and Enforcement	3.2.1.1	Forest Operations Inspections
Continuing Developments and Reporting Requirements			
89	Provincial Technical Committee	3.5.1.2 5.0	Provincial Level Advisory Committees Progress Reports
90	Timber Management Planning Manual Revision	3.7.1	Phase-in Provisions for this EA Approval
91	Timber Management Planning Brochure	3.5.5	Public Education on Forest Management
92	Public Education	3.5.5	Public Education on Forest Management
93	Implementation Manuals	3.5.2.1 5.0	Implementation Manual Review and Revision Progress Reports
94(a),(c),(d)	Revision of Silvicultural Guides; New Featured Species Guide: New Boreal Mixedwood Guide	3.5.2.1 5.0	Implementation Manual Review and Revision Progress Reports
94 (b)	New Environmental Guideline	3.5.2.2 5.0	Emulating Natural Disturbances patterns Progress Reports
95	Information Collection and Management - Inventory Information Collection	3.5.3.1 5.0	Inventory Information and Management Progress Reports
96	Information Collection and Management - Silvicultural Effectiveness Monitoring	3.2.2.2 5.0	Silvicultural Effectiveness Progress Reports
97	Information Collection and Management - Forest Ecosystem Classification Program	3.5.3.2 5.0	Forest Ecological Classification program Progress Reports
98	Information Collection and Management - Northern Ontario Wetlands Evaluation System	3.5.3.3 5.0	Northern Ontario Wetlands Evaluation System Progress Reports
99	Information Collection and Management - Areas of Natural and Scientific Interest	3.5.3.4 5.0	Areas of Natural and Scientific Interest Progress Reports
100	Scientific Research and Development - Growth and Yield Program	3.5.4.1 5.0	Growth and Yield Program Progress Reports
101	Scientific Research and Development - Effects of Full-Tree Harvest and Chipping	3.5.4.2 5.0	Full-Tree Harvest and Full-tree Chipping Studies Progress Reports
102	Scientific Research and Development - Tending and Protection Technologies	3.5.4.3 5.0	Tending and Protection Improvement Programs Progress Reports
103	Scientific Research and Development - Old Growth Policy	3.5.4.4 5.0	Old Growth Progress Reports
104	Scientific Research and Development - Social and Economic Analytical Methods	3.5.4.5 5.0	Data Systems and Analytical Methodologies Progress Reports
105	Scientific Research and Development - Timber Production Policy	3.5.4.6 5.0	Forest Resource Assessment Policy Progress Reports
106	Scientific Research and Development - Roadless Wilderness Areas Policy	3.5.4.7 5.0	Roadless Wilderness Areas Policy Progress Reports
107	Scientific Research and Development - Wildlife habitat supply modeling and landscape management methodologies	3.5.4.5 5.0	Data Systems and Analytical Methodologies Progress Reports
108	Scientific Research and Development - Geographic Information System technology	3.5.4.5 5.0	Data Systems and Analytical Methodologies Progress Reports
109	Scientific Research and Development - Professional and Technical Training Programs	3.5.4.8 5.0	Professional and Technical Training Programs Progress Reports
110	District Land Use Guidelines	3.5.4.9	District Land Use Guidelines

		5.0	Progress Reports
111	Progress Reports to MOE	3.7.2	Five-Year EA Report and Monitoring of this Timber Class EA Approval
Approval Period & Review Requirements			
112	Amendments to the Approval	3.7.3	Amending Provisions for the EA Approval
113	Approval period; Timber Management Planning Manual Phase-In Provisions,	3.7.1	Phase-in Provisions for this EA Approval
114	Eighth-year Review of the Approval	3.7.2	Five-Year EA Report and Monitoring of this Timber Class EA Approval
114 (a)(i)	Eighth-year Review of the Approval - complete record of amendments to the Approval	5.0	Amendments to the EA Approval
114 (a)(ii)	Eighth-year Review of the Approval - complete record of amendments to Timber Management Plans	5.0	Amendments to Forest Management Plans
114 (a)(iii)	Eighth-year Review of the Approval - complete record of bump-ups	5.0	Bump-Up Requests
114 (a)(iv)	Eighth-year Review of the Approval - most recent "State of the Forest Report"	5.0	State of the Forest Report
114 (a)(v)	Eighth-year Review of the Approval - progress reports on T&Cs 24, 27, 52(e), 80, 81, 93 to 110 and Appendix 19	5.0	Visual Resources -T&C 24 Environmental Guidelines - T&C 27 (a), 94 (b) Clearcut Harvesting - Planning and Reporting – T&C 27(b)&(c) Criteria for Watercrossing Removal – T&C 52 (d)&(e) Long-term Scientific Studies-Moose Habitat -T&C 80 and App. 19(1) Long-term Scientific Studies - Fish Habitat-T&C 80 and App. 19(2) Long-term Scientific Studies - Tourism Values-T&C 80 and App. 19(3) Long-term Scientific Studies - Other Wildlife – T&C 80 and App. 19(4) Wildlife Population Monitoring -T&C 81 Implementation Manuals - T&C 93 Review and Revision of Silvicultural Guides; Boreal Mixedwood Guide Development - T&C 94 (a)&(d) Marten and Pileated Woodpecker Habitat Guidelines - T&C 94 (c) Collection of Inventory Information and Development of Information Systems - T&C 95 Silvicultural Effectiveness Monitoring - T&C 96 Forest Ecosystem Classification System - T&C 97 Northern Ontario Wetlands Evaluation System - T&C 98 Areas of Natural and Scientific Interest -T&C 99 Growth and Yield – T&C 100 Study of Effects of Full-Tree Harvest and Full-tree Chipping - T&C 101 Tending and Protection Programs - T&C 102 Old Growth -T&C 103 Social and Economic Analysis - T&C 104 Timber Production Policy - T&C 105 Roadless Wilderness Policy - T&C 106 Wildlife Habitat Supply Modelling and Landscape Management Methodologies - T&C 107 Geographic Information Systems - T&C 108 Professional and Technical Training Programs – T&C 109 and App. 23 District Land Use Guidelines - T&C 110
114 (a)(vi)	Eighth-year Review of the Approval - additional documentation		Supplied
114 (a)(vii)	Eighth-year Review of the Approval - overview of success and failure of public consultation	5.0	Overview of Success and Failure of Pubic Consultation
114 (a)(viii)	Eighth-year Review of the Approval - complete record of Contingency Plans	5.0	Contingency Plans
114 (a)(ix)	Eighth-year Review of the Approval - complete record of major problems identified through independent audits	5.0	Major Problems Identified Through Independent Forest Audits
114 (a)(x)	Eighth-year Review of the Approval - complete record of	5.0	Regeneration Expenditures

	estimated and actual regeneration expenditures		
114 (b)	60-day public review period of 8th-year review	1.4.5	Public Input into Preparing this Submission
114 (c)	MOE review period	1.4.5	Public Input into Preparing this Submission
115	Record of Timber Management Planning Class EA Hearing	3.6.4	EA Approval Records
Appendix 1	Committees	3.5.1.1 3.5.1.2 3.1.3	Regional Advisory Committee Provincial Level Advisory Committees Public and Aboriginal Consultation
Appendix 2	Public Notice Requirements: Service	3.1.3 3.1.9 3.1.10	Public and Aboriginal Consultation Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Annual Operations
Appendix 3	Public Notice Requirements: Timing and Notice Contents	3.1.3 3.1.9 3.1.10	Public and Aboriginal Consultation Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Annual Operations
Appendix 4	Information Available For Public Consultation	3.1.3 3.1.9 3.1.10	Public and Aboriginal Consultation Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs Annual Operations
Appendix 5	Background Information	3.1.5 3.1.8	Background Information and Management Unit Description Planning of Harvest, Renewal and Maintenance Operations
Appendix 6	Native Background Information Report	3.1.5	Background Information and Management Unit Description
Appendix 7	Implementation Manuals for Timber Management	3.1.8 3.5.2.1	Planning of Harvest, Renewal and Maintenance Operations Implementation Manuals Review and Revision
Appendix 8	Report of Past Forest Operations	3.1.11 3.1.5	Annual Reporting Background Information and Management Unit Description
Appendix 9	Supplementary Documentation	3.1.2	Forest Management Plans - General
Appendix 10	Report on the Protection of Identified Native Values	3.1.8	Planning of Harvest, Renewal and Maintenance Operations
Appendix 11	Timber Management Plan Summary	3.1.2	Forest Management Plans - General
Appendix 12	Contingency Plans	3.1.9	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
Appendix 13	Amendments to Timber Management Plans	3.1.9	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
Appendix 14	Planning For Insect Pest Management Programs	3.1.9	Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
Appendix 15	Bump-Up Procedure	3.1.4 3.1.9	Issue Resolution and Bump-up Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs
Appendix 16	Prescribed Burn	3.1.10	Annual Operations
Appendix 17	Aerial Herbicide and Insecticide Projects	3.1.10	Annual Operations
Appendix 18	Annual Report (Forest Management Unit)	3.1.5 3.1.11	Background Information and Management Unit Description Management Unit Annual Reporting
Appendix 19	Provincial Level Monitoring: Long-term Scientific Studies	3.2.2.4	Monitoring Guideline Effectiveness
Appendix 20	Provincial Annual Report on Timber Management to the Legislature	3.3.1 3.7.2	Provincial Annual Report on Forest Management Five-Year EA Report and Monitoring of this Timber Class EA Approval
Appendix 21	Central Records on Annual Pesticide Use	3.1.11	Management Unit Annual Reporting
Appendix 22	State of the Forest Report	3.3.2 3.7.2	State of the Forest Report Five-Year EA Report and Monitoring of this Timber Class EA Approval
Appendix 23	Continuing Education and Training	3.5.5 3.5.4.8	Public Education on Forest Management Professional and Technical Training Programs
Appendix 24	Amendments to the Approval for the Undertaking	3.7.3	Amending Provisions for the EA Approval
Appendix 25	Independent Audits: Terms of Reference	3.2.2.1	Audit Program

3.1 Forest Management Planning

3.1.1 Introduction

The forest management planning process is a fundamental part of the current EA Approval for the undertaking of forest management. Eighty-two of the 115 terms and conditions of the EA Approval (73 in whole, and 9 in part), and 18 of the associated 25 appendices, are forest management planning terms and conditions. The forest management planning terms and conditions are delivered at the individual management unit level in MNR's forest management system, and address the preparation of:

- a forest management plan;
- annual work schedules and associated project plans;
- annual reports; and
- a report of past forest operations.

The planning terms and conditions have been fully incorporated into the FMP Manual, in accordance with the requirements of T&C 90. As required by T&C 90(a), MNR finalized a draft FMP Manual in May 1995. Under the provisions of T&C 90(b), the EA Board reconvened for three days in June and August, 1995 to receive submissions from the parties to the Timber Class EA hearings about whether the planning terms and conditions were properly described in the draft FMP Manual. To assist in that review exercise, MNR produced a draft cross-reference table that identified where each planning term and condition was incorporated into the FMP Manual, by section and page.

On October 10, 1995, the EA Board issued a report on the three-day review exercise, and directed MNR to make a number of further revisions to the draft FMP Manual. MNR complied with that direction from the EA Board and produced a final FMP Manual, which was formally regulated under the provisions of the *Crown Forest Sustainability Act* in September 1996. For the regulated FMP Manual, a final cross-reference table was produced which identified where each planning term and condition was incorporated into the FMP Manual, by section and page.

As a legally regulated manual under the *Crown Forest Sustainability Act*, the FMP Manual contains requirements for the preparation of forest management plans, annual work schedules and associated project plans, annual reports and reports of past forest operations which apply to each individual management unit in the Area of the Undertaking. MNR's regulatory role in the review and approval of those various planning products ensures that the requirements of the FMP Manual, and therefore the requirements of the forest management planning terms and conditions of the EA Approval, have been met.

As provided by T&C 113(b), the requirements of the FMP Manual for the preparation of FMPs have been phased-in, beginning with the 1998 FMPs (i.e., FMPs scheduled for approval and implementation, commencing April 1, 1998). With the approval of the 2002 FMPs, the requirements of the FMP Manual for FMPs will have been applied once to each management unit in the Area of the Undertaking. Requirements of the FMP Manual for FMP amendments became effective upon regulation of the FMP Manual. Requirements of the FMP Manual for annual work schedules and associated project plans, and annual reports became effective April 1, 1997.

Proposed Changes to the Planning Terms and Conditions

MNR is proposing changes to the forest management planning process to reflect three approaches for improvement. The first approach is to clarify the relationship between the enabling planning direction provided by the EA Approval and the detailed, technical forest management planning direction provided by the *Crown Forest Sustainability Act* and the FMP Manual. The second approach is to incorporate the concept of a FMP for a ten-year period with two five-year operational terms. The third approach is to consolidate planning direction for ease of use through a repackaging into new recommended terms and conditions. These new approaches reflect the advice and recommendations of stakeholders, practitioners and others directly engaged in forest management planning.

As noted in Section 1.3 Current Context, the *Crown Forest Sustainability Act*, that took effect in 1995, was a landmark event that built upon the EA Board's decision of 1994. The Act provided for a FMP Manual that consolidated the detailed technical matters of forest management planning, many of which had also been required by the EA Board's decision.

As part of this Timber Class EA Review, MNR is recommending that enabling planning direction for the overall forest management planning process will continue to be provided through the EA Approval and will be administered by the Ministry of Environment and Energy pursuant to the *Environmental Assessment Act*. Detailed, technical forest management planning requirements will continue to be provided through the FMP Manual, consistent with the EA Approval, and administered by MNR pursuant to the *Crown Forest Sustainability Act*. To facilitate continuous improvement, those detailed, technical planning requirements of the FMP Manual may be amended from time to time, with legally required public consultation under the *Crown Forest Sustainability Act*, provided that any such amendments are consistent with the EA Approval.

MNR is recommending a change to the forest management planning process, relating to the period and term of an FMP. In summary, this proposed change will provide for an FMP with a ten-year period, with two five-year operational terms, and provision for a mid-plan review. This recommended change responds to the recommendations of the forest industry, the Partnership for Public Lands and MNR as articulated in Article 15 of the Ontario Forest Accord. Article 15 of the Ontario Forest Accord stated that:

> "MNR will make best efforts, together with the forest industry and the environmental groups, to obtain appropriate modifications to the Timber Class E.A. and the Crown Forest Sustainability Act and its regulations, in order to permit… the lengthening of the term of forest management plans."

The change to a FMP for a ten-year period with two five-year operational terms has resulted in adjustments to timeframes associated with a number of the terms and conditions of the current EA Approval. In particular, terms and conditions affected relate to long-term management direction, access planning, planning of operations and management unit annual reporting.

The third approach for improvement is to consolidate the technical direction for forest management planning. In the EA Board's decision, technical direction for some planning subjects was dispersed throughout the various terms and conditions and associated appendices. This complexity has sometimes made it difficult for practitioners to understand and follow forest management planning direction. MNR proposes a repackaging into new terms and conditions by subject matter for clarity and ease of use. This repackaging has resulted in fewer terms and conditions that avoid the need for appendices, recognizing that detailed, technical planning requirements are addressed in a FMP Manual regulated under the *Crown Forest Sustainability Act*.

Consolidation of Planning Terms and Conditions

The consolidation of planning terms and conditions has resulted in a condensation of the original 82 planning terms and conditions into 26 new ones, under ten broad subject areas.

The ten broad subject areas and their individual elements are set out in Table 3, and the corresponding original planning terms and conditions are identified for each of those subject areas.

Table 3: Components of Forest Management Planning and Original Planning Terms and Conditions

Component	Original Planning T&C + Appendix
3.1.2 Forest Management Plans – General	
Plan Preparation & Renewal Schedule	1, 5, 60, 68
Plan Preparation by Plan Author, Planning Team and LCC	2, 3, 4(a)(i), 4(b), App. 1(D)
Plan Documentation	56 + App. 9, 58 + App.11, 59
Plan Certification, Review & Approval	60, 61, 62(a)-(d), 63
3.1.3 Public and Aboriginal Consultation	
Local Citizens Committees	4(a)(i), 4(b) + App. 1(D)
Public Consultation	Public Notices: To Whom - 6 + App. 2(A) Stages - 8(a) Contents - 8(b) + App. 3(A),(E); 9 to 12
	Information Availability: Contents - 8(b) + App. 4(A) Maps - 13, 18, 34 Draft/Approved FMPs - 65 Consultation Efforts - 7, 76 (part) Written Responses - 14
Aboriginal Consultation	Public Notices: To Whom - 6 + App. 2(A) Stages - 8(a) Contents - 8(b) + App. 3(A),(E); 9 to 12
	Information Availability: Contents - 8(b) + App. 4(A) Maps - 13, 18, 34 Draft/Approved FMPs - 65 Consultation Efforts - 7, 76 (part) Written Responses - 14
3.1.4 Issue Resolution and Bump-Up	
Issue Resolution and Bump-up	64, 62(e)-(h), 70 + App.15, 71
3.1.5 Background Information and Management Unit Description	
Background Information	Forest Resource Inventory - 15 Fisheries and Wildlife Inventory - 16 Background Information - App. 5(A) Report of Past Forest Operations - 21 + App. 8, 18
Management Unit Description	Other Resources/Uses & Values Maps - 17 + App. 5(B), 103(e) Current Forest Condition - 107 (part) Native Background Information Report -19 + App. 6, Social and Economic Desc. - 104 (part)
3.1.6 Planning Long-term Management Direction	
Long-term Management Direction	Objectives, Strategies and Issues - 22, 23 Forest Regulation - Maximum Allowable Depletion – 28

	Landscape & Wildlife Habitat Analysis – 107 (part) Social and Economic Analysis - 104 (part) Modelling and Methodologies - 107 (part)
3.1.7 Access Planning	
Primary and Branch Road Corridors	Primary Access Corridors - 30 to 33 Primary and Secondary Road Locations - 46, 47, 48 to 51, 52(a)-(d)
Area of Concern Crossings - Primary and Branch Roads	Area of Concern and Road Locations - 51, 52(a)-(d) Mapping – 54
Operational Roads	Tertiary Roads - 53 Mapping – 54
3.1.8 Planning of Harvest, Renewal and Maintenance Operations	
Identification of Areas of Operations	Selection of Areas for Operations - 24, 29, 34, 35, 45 Clearcut Harvesting - 27 intro, 27(b)(c) Forecasts - 36, 37, 38 Contingency Area – 39 Mapping – 54
Planning of Operations - Silvicultural Ground Rules	Silvicultural Ground Rules - 25, 26, 40(a) Implementation Manuals - 20 + App. 7
Planning of Operations - Silvicultural Treatments of Special Public Interest	Silvicultural Operations of Special Public Interest - 40(b)
Planning of Operations - Area of Concern Prescriptions	AOC Prescription Planning & Documentation - 41 to 44, 24,103(e) Implementation Manuals – 20 + App. 7 Values Maps -17 + App. 5(B) Mapping – 54
Report on Protection of Identified Aboriginal Values	Report on Protection of Identified Native Values - 57 + App. 10
Improving Silvicultural Planning	Forecasts - 36, 37, 38
Monitoring Program	Monitoring - 54, 55
3.1.9 Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs	
Amendments to FMPs	67 + App. 13, parts of 1, 3, 6, 8(b), 60, 61, 70, 71; App. 2(B); App. 3(B),(E); App. 4(B), App. 15
Contingency Plans	66 + App. 12; parts of 1, 3, 6, 8(b), 60, 61, App. 2(B), App. 3(B),(E); App. 4(B)
Insect Pest Management Programs	69 + App. 14; parts of 6, 8(b), 70, 71, App. 2(B); App. 3(B),(E); App. 4(B), App. 15
3.1.10 Annual Operations	
Annual Operations	Annual Work Schedules - 72(a), 72(b); parts of 6 + App. 2(C); 8(b) + App. 3(C), (F); 8(b) + App. 4(C); 45, 54, 75, 76 (part) Prescribed Burns - 73 + App. 16; parts of 6 + App. 2(D); 8(b) + App. 3(D); 8(b) + App. 4(D) Aerial Pesticide Projects - 74 + App. 17; parts of 6 + App. 2(D); 8(b) + App. 3(D); 8(b) + App. 4(D)
3.1.11 Management Unit Annual Reporting	
Management Unit Annual Reports	Annual Reports - 79 + App. 18; parts of 24, 27(c) Forest Operations Inspections - 78 (part) Central Records Pesticide Use - 83 + App. 21 Reports of Past Forest Operations & Maps - 21 + App. 8; part of 18

3.1.2 Forest Management Plans - General

Current Requirements

Plan Preparation and Renewal Schedule

T&Cs 1 to 3, 4(a)(i), 4(b), 5, 56, 58, 59, 61, 62(a) to (d), 63, and 68, and the associated Appendices 1(D), 9 and 11 of the current EA Approval prescribe that forest management plans will be prepared by planning teams, assisted by Local Citizens Committees. The documentation, review and approval, and certification requirements for FMPs are also prescribed.

T&C 1 prescribes that an FMP will be prepared for each management unit in accordance with the forest management planning requirements of the EA Approval. T&C 68 prescribes that an FMP will normally be prepared every five years, and provides for an FMP to be prepared sooner, if required. T&C 5 prescribes the requirement for an annual list of forest management plans in preparation to be provided to Ministry of Environment and Energy, and to be available to the public.

Plan Preparation by Plan Author, Planning Team and Local Citizens Committee

T&C 2 prescribes that an FMP will be prepared by a planning team, assisted by a Local Citizens Committee, with opportunities for public participation. T&C 3 and 60 prescribe the composition of the planning team, which includes forest company and MNR staff, and the role of the Registered Professional Forester as the plan author. T&Cs 4(a)(i) and 4(b) and Appendix 1(D) prescribe the requirements for a Local Citizens Committee.

Plan Documentation

T&C 56 and Appendix 9 prescribe the supplementary documentation that must accompany an FMP. T&C 58 and Appendix 11 prescribe the requirements for an FMP summary to be available to the public with each draft and approved FMP. T&C 59 prescribes the requirements of an index to the environmental assessment components of an FMP.

T&C 1

Timber Management Plans, amendments to Timber Management Plans, and Contingency Plans shall be prepared for each forest management unit in Ontario in accordance with the timber management planning requirements described in these terms and conditions.

T&C 2

Timber Management Plans shall be prepared in an open consultative fashion by a Registered Professional Forester, who shall be the Plan author assisted by an interdisciplinary planning team and a Local Citizens Committee with opportunities for ongoing participation by interested and affected persons and organizations, and by the general public

T&C 3

(a) Each Timber Management Plan, each amendment to a Timber Management Plan, and each Contingency Plan shall be prepared by a Registered Professional Forester, who shall be the Plan author, assisted by an interdisciplinary planning team and Local Citizens Committee. Planning teams shall include representatives of the various programs of the Ministry of Natural Resources,

including persons with expertise in the areas of timber management, fish and other wildlife biology, lands administration, parks management, fire management, and enforcement. The district manager may assign additional responsibilities to specific planning team members with regard to concerns or interests not represented on the planning team. The Local Citizens Committee will appoint a representative of the committee to serve as a member of the timber management planning team.

(b) The district manager will appoint the planning team and identify its members in the Notice of Invitation to Participate.

(c) On management units where the Plan is prepared by companies the company shall select the Plan author. The planning team shall in this event include an MNR Registered Professional Forester.

(d) When the district manager, in consultation with other government ministries and agencies, identifies matters of specific interest to them which will be addressed in the Timber Management Plan, representatives of those ministries and agencies will be invited to act as advisors to the planning team. This role is available to any government ministry or agency, including those agencies responsible for native affairs. For Ministry-prepared plans, the district manager may invite representatives from forest companies operating on the forest management unit to act as advisors to the planning team. The Ministry of Environment and Energy may attend planning team meetings as it decides.

(e) All Timber Management Plans shall contain a list of all planning team members including the Plan author, all planning team advisors and all Plan reviewers, with their job titles and/or affiliations, and a list of all members of the Local Citizens Committee and their affiliations if any.

(f) The planning team will be chaired by the Plan author.

1

T&C 4

(a) The Ministry of Natural Resources shall establish a structure of committees to review, advise, guide and improve the timber management planning process and to increase the level of public input to and public scrutiny of timber management planning in the province.

  (i) In addition to the public consultation provisions set out in Conditions 8 to 12, a number of local citizens representing a range and balance of interests shall be afforded expanded opportunities to participate in the timber management planning process through membership in a Local Citizens Committee (LCC). MNR shall establish at least one LCC for each district and where needed, one for every management unit in the Area of the Undertaking.

(b) The composition and terms of reference of the senior Provincial Policy Committee, the Provincial Technical Committee, the Regional Advisory Committee and the Local Citizens Committee are described in Appendix 1.

2

T&C 5

By January 31 of each year, MNR shall produce a list of all Timber Management Plans currently in preparation and those which are expected to be initiated in that year, including a tentative list of starting dates. The list shall be provided to any person who requests a copy, and shall be available at Ministry of Natural Resources area offices, district offices, regional offices, the office of Operations Integration Branch in Sault Ste. Marie, and MNR's Natural Resources Information Centre, Main Office in Toronto. This list shall also be provided to the regional offices and the Environmental Assessment Branch of the Ministry of Environment and Energy and shall be included in the Annual Report to the Legislature (Condition 82, Appendix 20, section 1(l)).

3 Supplementary Documentation:Supplementary
4 Documentation:Supplementary Documentation:Supplementary
5 Documentation:Supplementary Documentation:Supplementary
6 Documentation:Supplementary Documentation:

T&C 56

Each Timber Management Plan shall contain supplementary documentation which describes the information used and developed in planning. The contents of the supplementary documentation are listed in Appendix 9.

T&C 58

A summary of each draft and approved Timber Management Plan shall be produced and shall be available for distribution to the general public upon request. The summary documentation shall be produced in both written and mapped format. The contents of the Timber Management Plan summaries are listed in Appendix 11.

T&C 59

Each Timber Management Plan shall contain an Index to the environmental assessment components of the Timber Management Plan. The Index shall reference the location of the following information in the Timber Management Plan:

(a) background information;
(b) a description of the environment to be affected;
(c) a description of the process for selecting operations and the alternatives which were considered;
(d) a description of the proposed activities;
(e) a description of the expected effects on the environment and proposed mitigation measures and monitoring;
(f) a description of the public consultation process and a summary of the results; and any other environmental assessment matters addressed in the Timber Management Plan.

T&C 60

Each Timber Management Plan, amendment to a Timber Management Plan, and Contingency Plan shall be prepared by a Registered Professional Forester who shall be the Plan author, and will be so certified in accordance with the Crown Timber Act, R.S.O. 1990, c. C.51.

T&C 61

Each Timber Management Plan, amendment to a Timber Management Plan, and Contingency Plan shall be recommended for approval by the appropriate district manager. In making this recommendation, the district manager shall certify that:

(a) the Plan has been prepared in accordance with this approval and with the requirements of the Timber Management Planning Manual for Crown Lands in Ontario, as amended in accordance with Condition 90;
(b) relevant policies and other obligations have been considered, including integrated resource management policy, and general government policies and obligations related to native people and any agreements with native people specific to the management unit;
(c) the Plan has been prepared in accordance with the appropriate implementation manuals. In the event that the Plan contains prescriptions which differ from specific direction as to the appropriate prescription or with recommendations in the applicable implementation manuals, the specific section of the Plan which provides documentation of the "exception" and the reasons for the "exception" shall be referenced in the district manager's Certification.

T&C 62

(a) Each draft Timber Management Plan shall be reviewed by the district office, and the appropriate regional office for compliance with this approval, with the Timber Management Planning Manual for Crown Lands in Ontario as amended in accordance with Condition 90 and with relevant government policies and other obligations as described in Condition 61(b).

(b) Upon completion of this review, the MNR shall produce a preliminary list of required alterations and the reasons for the required alterations.
  (i) The district manager shall consider and resolve any remaining disagreements among planning team members.
  (ii) Required alterations relating to manipulation of the forest cover shall be certified by a Registered Professional Forester.

(c) The draft Timber Management Plan accompanied by the preliminary list of required alterations shall be subject to public review, as described in Stage Three of the public consultation process. After the completion of that public review, MNR shall consider the comments received, and produce a final list of required alterations.

(d) (i) The final list of required alterations shall be provided to the Plan author, the Local Citizens Committee, any person who has requested a change in the draft Plan, and any other person known to be directly affected by the manner in which a requested change has been addressed.
  (ii) The final list shall be accompanied by a request to any person who wishes a formal review of a specific Timber Management Plan decision, to notify the regional director as soon as possible.

(e) Where a person has requested a formal review by the regional director any other person known to be directly affected by the request shall be notified that formal review of a specific Timber Management Plan decision has been requested. In conducting his review, the regional director shall also solicit and consider the views of the Local Citizens Committee, the Plan author and the district manager.

(f) The regional director shall provide a written decision with reasons to the affected parties and to the Local Citizens Committee.

(g) The documentation produced in the review shall be included in the supplementary documentation which accompanies the approved Timber Management Plan, and in the event of a bump-up request concerning that issue, shall form part of any record produced by MNR to the Ministry of Environment and Energy.

(h) The regional director shall complete any such review before MNR approval of the Plan

1

T&C 63

Upon satisfactory completion of the required alterations to the draft Plan, the revised Timber Management Plan shall be approved by the regional director, and the Notice of Plan Inspection shall be issued.

2

T&C 68

(a) A scheduled renewal of a Timber Management Plan shall normally be undertaken for each forest management unit every five years.

(b) An unscheduled renewal of a Timber Management Plan shall be undertaken if the current Plan is rendered obsolete at any time during its five-year term. In such circumstances, all planning requirements for timber management plans shall apply. While the new Timber Management Plan is being prepared, a Contingency Plan may be required.

3

Appendix 1: Committees

D: The Local Citizens Committee:

1. Composition and Formation:

The Local Citizens Committee shall be a standing committee. Membership shall be by appointment from the district manager. The majority of appointments shall be drawn from nominations from interest groups. The main interests represented on this committee should include:
  (a) local business;
  (b) tourism industry;
  (c) anglers and hunters;

(d) native communities;
(e) forest industry;
(f) naturalists;
(g) municipalities;
(h) trappers and other resource users;
(i) other Crown Land recreationalists;
(j) forest industry trade unions;
(k) woodsworkers;
(l) small independent loggers;
(m) Chamber of Commerce member or Economic Development Officer;
(n) other interest groups; and
(o) the general public.

2. Purposes:

The purpose of the Local Citizens Committee is to participate as an integral part of the timber management planning process by:

(a) ensuring that all local interests are effectively communicated to all others involved in timber management planning;
(b) increasing the effectiveness of the four-stage public consultation process (described in Conditions 9 to 12), by participating in its implementation, and in the consideration of any additional formal public consultation opportunities that would be useful, in the context of local circumstances and needs;
(c) participating in the development, identification and description of objectives, strategies, problems and issues (described in Conditions 22 and 23).
(d) participating in the development of the values map(s) (described in Condition 17);
(e) promoting integration of all interests by participating in the evaluation of trade-offs to be made during the planning process and the resolution of problems, differences and conflicts as early as possible in the planning process;
(f) assisting in monitoring the performance of Timber Management Plan implementation; and
(g) providing advice to the district manager when discretionary decisions must be made (e.g.: the categorization of amendments, and responses to bump up requests).

3. Local Citizens Committee input to the Planning Team and to Insect Pest Management:

(a) The Local Citizens Committee may nominate a representative of the Committee to serve as a member of the timber management planning team.
(b) Other members of the Local Citizens Committee may attend planning team meetings as observers.
(c) Joint meetings of the Local Citizens Committee and the planning team shall be held at agreed upon stages of the planning process.
(d) The planning team and representatives of the Local Citizens Committee shall attend public information centres.
(e) The member of the Local Citizens Committee who serves as the representative on the planning team shall be invited to serve on the district or regional Multi-Disciplinary Committee which produces the district insect pest management program.

4. Procedural Matters:

The Local Citizens Committee shall develop its own rules with respect to any procedural matters required to meet its responsibilities during timber management planning and Plan implementation. These matters include such things as frequency of and attendance at meetings and Information Centres, and circulation of information among members of the Local Citizens Committee.

5. Disbursements and Support:

(a) Members of the Local Citizens Committee shall be reimbursed by MNR for reasonable out-of-pocket expenses in connection with their participation.
(b) The LCC member serving on the planning team shall be provided a reasonable per diem fee for attendance at planning team meetings.
(c) MNR shall provide the necessary office support, e.g., secretarial support and typing of report for supplementary documentation, for the affairs of the Committee to be conducted efficiently and effectively.
(d) Each MNR district manager shall provide to the Local Citizens Committee any information

required by the Committee. This information will be provided as it becomes available, in order to ensure achievement of the Local Citizens Committee purposes. Without limiting the generality of the foregoing, each Local Citizens Committee will be provided with the following materials for the relevant Management Unit, in summary form and at a time no later than the invitation to participate:

(i) Background information;
(ii) data describing non-timber resources; and
(iii) data describing the timber resource.

6. Reports and Records:

(a) All documentation produced by the Local Citizens Committee shall be available for review by interested persons. In particular, the Local Citizens Committee shall prepare a report concerning their activities during Timber Management Plan preparation; the problems and issues addressed by them; and their assessment of the effectiveness of the Committee structure and recommendations for change, if any and an assessment of the co-operation provided to the committee by the Ministry. This report shall be summarized by the LCC and provided as follows:

(i) in an early version for inclusion in the Preliminary Plan Summary to be distributed at the First Information Centre (Condition 10(a) and Appendix 4, part A, section 2(a));
(ii) in final form for inclusion in the Draft Plan Summary (Conditions 11(a) and 58; Appendix 4, part A, section 3(a)(iv); Appendix 11) and revised, if necessary for the final Plan;
(iii) as part of the Timber Management Plan Summary (Conditions 12 and 58; Appendix 11, section 1(d).
(iv) the full report of the Local Citizens Committee shall form part of the supplementary documentation of the Timber Management Plan (Condition 56, Appendix 9, section 1(f).

(b) Timber Management Plans shall contain a brief statement on the first page reporting generally the Local Citizens Committee's agreement or disagreement with the Plan and indicating that the Local Citizens Committee's report is available in the Supplementary Documentation to the Plan.

1

Appendix 9: Supplementary Documentation

1. Each Timber Management Plan shall contain the following supplementary documentation:

(a) a list of the implementation manuals used in the preparation of the Timber Management Plan;
(b) a copy of the values map, current as of the date of approval of the Timber Management Plan;
(c) a list of references to the sources of the information which is summarized on the values map (or maps) or otherwise available in the data base; identification of the methodologies used for data collection; and identification of those subjects for which data is recognized as being incomplete or missing;
(d) a list of references to the sources of the information used to update the current Forest Resource Inventory data;
(e) a summary of public consultation in the preparation of the Plan;
(f) a report from the Local Citizens Committee concerning its activities during Plan preparation; the problems and issues addressed by the Committee; an assessment of the effectiveness of the committee structure; and recommendations for change, if any;
(g) a summary of the major issues encountered and addressed in the Plan including any significant disagreements among planning team members on major issues;
(h) any documentation produced in accordance with the issue resolution procedures described in Condition 64;
(i) any documentation produced in accordance with the Plan review and approval process as described in condition 62;
(j) documentation of the planning of operational prescriptions for "Areas of Concern";
(k) the Plan author's summary of the Report on Past Forest Operations and proposed future direction;
(l) a listing of stands allocated for depletion, including:
    (i) total area and volume allocated;

  - (ii) area allocated for normal operations and the associated silvicultural package;
  - (iii) area allocated for modified operations, including AOCs, and the associated silvicultural package; and
  - (iv) area allocated as reserves;
- (m) documentation of the planning of primary and secondary access road corridors, the locations of primary and secondary roads in Areas of Concern, and conditions on tertiary roads in Areas of Concern;

2. The foregoing supplementary documentation will accompany both the draft and approved Timber Management Plans, with whatever modifications are necessary in the circumstances.

Appendix 11: Timber Management Plan Summary

1. The text of the Timber Management Plan Summary shall include the following items, and shall provide references to the appropriate sections of the Plan for each item:
   - (a) a map of the forest management unit for which the Timber Management Plan is prepared, containing sufficient detail to allow for identification of the location of the forest management unit;
   - (b) a general description of the forest;
   - (c) a description of the management responsibilities for the management unit (i.e. FMA, Crown or Company Management Unit), and a description of the forest industry being supplied from the management unit;
   - (d) highlights of the Local Citizens Committee summary, especially its criticism, to be prepared and approved by the LCC.
   - (e) a summary of the objectives and strategies for the management of the timber resource of the forest management unit;
   - (f) a summary of the existing management objectives for the non-timber values of the forest management unit which could be affected by timber management activities, and the timber management strategies intended to assist in meeting those non-timber objectives;
   - (g) a summary description of the silvicultural prescriptions commonly used on the management unit;
   - (h) a summary description of the results of the Maximum Allowable Depletion calculations, and the percentage of the Maximum Allowable Depletion(s) which is planned for harvest;
   - (i) a summary of the major issues encountered and addressed in the Plan including any significant disagreements among planning team members on major issues;
   - (j) the names of the district manager, Plan author, and all members of the Local Citizens Committee;
   - (k) the schedule for any remaining formal public consultation opportunities;
   - (l) a comment form; and
   - (m) a statement that there is an opportunity at any time during the timber management planning process to make a request to the Minister of Environment and Energy for a bump-up of specific proposed timber management activities to the status of an individual environmental assessment.
2. A mapped summary of the operations planned for the five-year term of the Timber Management Plan shall also be produced, to assist in public review of the Timber Management Plan. The map will be prepared at a suitable scale to allow for appropriate resolution of the information and for ease of reproduction. The map will be available for distribution to the public at Stage Three and Stage Four of the public consultation process coinciding with the Draft and Approved Plans, with whatever modifications are necessary in the circumstances.
3. The Timber Management Plan summaries for the public shall be produced for both the draft Plan at the Second Information Centre and for the approved Timber Management Plan, with whatever modifications are necessary in the circumstances.

Implementation Experience

Plan Preparation and Renewal Schedule

Forest management plans have been prepared in accordance with the requirements of the FMP Manual that fully incorporated the planning requirements of the EA Approval.

Practitioner experience indicates that the planning effort every five years is very significant, in terms of both time and staff resources. In particular, significant planning effort is required for the long-term management direction component of a forest management plan, which practitioners indicated normally remained valid beyond five years and the public has indicated an interest in seeing where operations are planned for longer than 5 years.

Practitioners and stakeholders requested that MNR consider improvements to the forest management planning process, in particular to address the frequency and scope of the planning effort. In addition to the request for improvements, Article 15 of the 1999 Ontario Forest Accord committed MNR to investigate lengthening the term of a forest management plan. In 1999, MNR initiated the Forest Management Planning Improvement Project with stakeholders, practitioners, Aboriginal representatives and others directly engaged in forest management planning to investigate and develop solutions to improve the forest management planning process.

The participants in the Forest Management Planning Improvement Project were unable to make a specific recommendation to the steering committee on lengthening the plan term, and therefore the steering committee recommended forming a focus group of experienced practitioners to further investigate and evaluate options for lengthening the plan term.

A questionnaire was developed and sent out to representatives of the forest industry, MNR and the Partnership for Public Lands to receive input on five options. Based on the response to the questionnaire, three options were further considered: 1) Retain the current five-year planning process; 2) Move to a ten-year planning process and 3) Move to a ten-year planning process with two five-year operational terms and require a mid-plan review to be done prior to commencing with planning for operations for the second five-year operational term.

The focus group met and discussed the three options, considered the pros and cons of each option and made a recommendation. Subsequently, a follow-up meeting was held with a representative of the Partnership for Public Lands to review the recommendation. With general support from all focus group participants, and the Partnership for Public Lands, a decision was made to proceed with the concept of a FMP for a ten-year period with two five-year operational terms.

The annual list of all forest management plans in preparation, which provides a consolidated list of all forest management planning activity in the province, has been produced each year and distributed to the locations specified in T&C 5 of the current EA Approval. Many individuals and groups have requested the annual list of FMPs over the past 8 years.

Plan Preparation by Plan Author, Planning Team and Local Citizens Committee

A multi-disciplinary planning team approach has proven to be effective for the preparation of forest management plans. Practitioners have indicated it was important to have a Registered Professional Forester from both the forest company and MNR on the planning team. Plan authors have indicated that it is often difficult, due to workload, for them to effectively fulfill the requirements of both plan author and chair of the planning team.

Local Citizens Committees were established to participate in the preparation and implementation of forest management plans. Most Local Citizens Committees have agreed to have a member participate on the planning team, and felt that their participation was well received. For additional details on Local Citizens Committees, see Section 3.1.3 Public and Aboriginal Consultation.

In response to desires from some Aboriginal communities to be more directly involved with planning teams, District Managers have added Aboriginal community representatives as planning team members.

Plan Documentation

Supplementary documentation has been provided with each FMP, and an index to the environmental assessment components of each FMP have been produced, in accordance with the requirements of the EA Approval.

The supplementary documentation contained the detailed information used in the preparation of the plan that included the background information and supporting rationale to assist the reader in understanding the decisions contained in the plan.

The environmental assessment index has provided the reader with easy access to the portions of the FMP which contain environmental assessment components.

An FMP summary was prepared for each FMP, in accordance with the requirements of the EA Approval. Public participants have supported the concept of an FMP summary, but have indicated that in many cases the summaries are too technical.

Plan Certification, Review and Approval

Implementation experience has shown that the requirements for plan certification, review and approval are appropriate and provide a sound process.

Analysis of Implementation Experience

Plan Preparation and Renewal Schedule

Generally, practitioners and participants in forest management planning found the planning process to be lengthy, complicated and expensive, and identified the need for improvements to the planning process. The Forest Management Planning Improvement Project and subsequent work, resulted in a number of recommended changes to current FMP requirements.

The most significant change to the planning process is to require the preparation of a FMP for a ten-year period, with two five-year operational terms, on the understanding that a mid-plan review would be undertaken and the planning of operations for the second five-year term would include public consultation. There was general agreement that such a major change in the planning process would provide for a more effective and efficient process, and significantly reduce the planning effort and staff resources required.

Many practitioners and participants agreed that a less frequent reconsideration of long-term management direction was reasonable, and they suggested reconsideration every ten years versus every five years, and that additional time provides for a more meaningful assessment of objective achievement. There was also general agreement that detailed planning of operations is practical and feasible for a five-year term.

This major change to a ten-year period in turn affects many elements of the forest management planning process. For example, the current requirements for public involvement will be maintained for the preparation of the FMP for the ten-year period, with the addition of public involvement provisions for the planning of operations for the second five-year operational term.

MNR recommends that the annual list of all forest management plans in preparation each year should continue to be produced, and be expanded to include the status of planning for the second five-year term and be available to the Ministry of Environment and Energy and the public.

MNR proposes to consolidate the requirements of T&Cs 1, 5 and 68 into a single new term and condition. This new term and condition will require that an FMP be prepared for each management unit, and that the plan must meet all of the forest management planning requirements of the EA Approval. MNR will continue to produce a list each year of the management units, where planning is being conducted and to make the list available to the Ministry of Environment and Energy and the public. MNR is recommending the preparation of an FMP for a ten-year period and two five-year operational terms, with a provision for a mid-plan review. If the mid-plan review supports continuation of the long-term management direction, the details of operations for the remaining five years shall be planned. If the mid-plan review does not support the continuation of the long-term management direction, an appropriate contingency plan shall be prepared to bridge the time required to complete an unscheduled plan renewal.

Recommended Term and Condition

MNR recommends that T&Cs 1, 5 and 68 be deleted and replaced with the following:

1. (a) A Forest Management Plan shall be prepared for each management unit in accordance with the Forest Management Planning Manual. Each Forest Management Plan shall contain long-term management direction for the management unit, identification of ten years of harvest, renewal and maintenance areas, locations of primary and branch road corridors, and the details of operations for the initial five-year operational term. Details of operations for the second five-year operational term shall be prepared during the fifth year of the Forest Management Plan.

(b) Normally a Forest Management Plan shall be renewed every ten years. The Year Three Annual Report for the management unit shall describe progress in plan implementation. If the Year Three Annual Report supports continuation of the long-term management direction, the details of operations for the remaining five years shall be planned, reviewed and approved during the fifth year, and then added to the Forest Management Plan. If the Year Three Annual Report does not support the continuation of the long-term management direction, an appropriate contingency plan shall be prepared to bridge the time required to complete an unscheduled plan renewal.

(c) By January 31 of each year, MNR shall produce a list of all management units. This list shall identify all forest management plans currently in preparation, all forest management plans expected to be initiated in that year, and all management units where operational planning for the second five-year operational term is scheduled in that year. MNR shall provide the list to the

Ministry of Environment and Energy, and shall make the list available to the public.

Plan Preparation by Plan Author, Planning Team and Local Citizens Committee

Practitioners and participants have indicated that it is important that there continue to be a Registered Professional Forester from both the forest company and MNR on the planning team.

Aboriginal peoples, provincial treaty organizations and stakeholders who participated in the Forest Management Planning Improvement Project have all indicated a strong interest in having more involvement of Aboriginal people in forest management planning. In response to the desires of some Aboriginal communities to be more directly involved with planning teams, MNR is recommending that an opportunity be provided for a representative of each Aboriginal community in or adjacent to the management unit for which a plan is being prepared to participate on the planning team. This representation will benefit the planning team by providing early and enhanced input in the identification of values and issues, and the means to address them. The Aboriginal community will benefit by increased knowledge of the planning process.

MNR proposes to consolidate the requirements of T&Cs 2, 3, 4(a)(i), 4(b), 60 and Appendix 1(D) into a single new term and condition. This new term and condition maintains the present requirement for the plan to be prepared by a Registered Professional Forester, assisted by a planning team and a Local Citizens Committee. This consolidated new term and condition also includes provisions for both Local Citizens Committee and Aboriginal representation on the planning team.

Recommended Term and Condition

MNR recommends that T&Cs 2, 3, 4(a)(i), 4(b) and 60 and Appendix 1(D) be deleted and replaced with the following:

2. (a) A Forest Management Plan shall be prepared for each management unit in an open and consultative fashion, by a Registered Professional Forester, who shall be the plan author.
(b) The plan author shall be assisted by an interdisciplinary planning team and a Local Citizens Committee, with opportunities for ongoing participation by interested and affected persons and organizations, and by the general public.
(c) The planning team shall include an MNR Registered Professional Forester and, where possible, a person who collectively represents overlapping licensees and beneficiaries of MNR wood supply commitments who do not have ownership in the company holding the Sustainable Forest Licence on the management unit.
(d) An opportunity shall be provided for a representative from the Local Citizens Committee and a representative from each Aboriginal community in or adjacent to the management unit to participate on the planning team.
(e) The planning team shall be appointed by the MNR District Manager.

Plan Documentation

Supplementary documentation to accompany a forest management plan, an index to the environmental assessment components of a plan, and an FMP summary have all proven to be useful documentation components of the planning system, and should continue to be requirements.

MNR proposes to consolidate the requirements of T&Cs 56, 58 and 59 and Appendices 9 and 11 into a single new term and condition. This new term and condition sets out the requirements for additional documentation to accompany a forest management plan.

Recommended Term and Condition

MNR recommends that T&Cs 56, 58 and 59 and Appendices 9 and 11 be deleted and replaced with the following:

3. The following documentation, in accordance with the details described in the Forest Management Planning Manual, shall accompany each draft and approved forest management plan:
- **(a) an index to the environmental assessment components of the plan;**
- **(b) supplementary documentation that summarizes the information that was used in the preparation of the plan, and provides supporting documentation for the decisions in the plan; and**
- **(c) a forest management plan summary in both written and mapped format.**

Plan Certification, Review and Approval

MNR recognizes the need to continue the roles of the plan author, MNR district and regional staff, MNR and forest company Registered Professional Foresters, the MNR District Manager and the MNR Regional Director in plan certification, review and approval.

MNR proposes to consolidate the requirements of T&Cs 60, 61, 62(a)-(d) and 63 into a single new T&C. This new T&C specifies the requirements for FMP certification, and for MNR review and approval of an FMP.

Recommended Term and Condition

MNR recommends that T&Cs 60, 61, 62(a)-(d) and 63 be deleted and replaced with the following:

4.
- **(a) The plan author shall certify that the draft and final Forest Management Plan has been prepared in accordance with the Forest Management Planning Manual.**
- **(b) MNR district and regional staff shall review the draft Forest Management Plan and produce a list of required alterations. Required alterations relating to the manipulation of the forest cover shall be certified by a Registered Professional Forester.**
- **(c) Upon satisfactory completion of the required alterations, the MNR District Manager shall certify that the plan has been prepared in accordance with the Forest Management Planning Manual, relevant policies and obligations (including any relevant MNR agreements with Aboriginal peoples), and MNR's current approved implementation manuals (guides) as described in the Forest Operations and Silviculture Manual.**
- **(d) The MNR District Manager's certification shall also identify all exceptions to the specific direction or recommendations in an implementation manual (guide).**

(e) The MNR District Manager shall recommend the plan for approval, and the MNR Regional Director shall make the decision on plan approval.

3.1.3 Public and Aboriginal Consultation

Current Requirements

Local Citizens Committees

T&C 4(a)(i), 4(b) and the associated Appendix 1(D) of the current EA Approval prescribe the requirements for local citizens committees in MNR's forest management planning system. T&C 4(a)(i) prescribes the requirement for a local citizens committee to be established for each MNR District or management unit. T&C 4(b) and Appendix 1(D) prescribe the purpose, membership composition, terms of reference and operational procedures for the local citizens committee, with principal emphasis on the role of the local citizens committee in the preparation of an FMP.

Public Consultation

T&Cs 6 to 14 and 65 and the associated Appendices 2(A), 3(A), 3(E) and 4(A) and parts of T&Cs 18, 34 and 76 prescribe the requirements for public consultation in the preparation of an FMP. T&C 8(a) prescribes the requirement for four stages of public consultation in the preparation of an FMP. In the FMP Manual, a fifth stage, a new Stage 2, was inserted to provide for additional public consultation in the development of the management direction for an FMP. T&C 8(b) prescribes the requirement for a public notice at each stage. T&C 6 and the associated Appendix 2(A) identify the recipients for direct written notices. T&C 8(b) and the associated Appendix 3(A) prescribe the content requirements of the public notice at each stage. T&C 8(b) and the associated Appendix 3(E) prescribe the content requirements of notices in the public print media.

T&Cs 9(a), 10(a), 11(a) and 12 repeat the requirement for a public notice at each stage, and describe each stage and its purpose. T&C 8(b) and the associated Appendix 4(A) prescribe the information that must be available at each stage; and T&C 13 and parts of T&Cs 18 and 34 elaborate on the requirements for the maps that must be available. T&C 65 prescribes the requirement for draft and approved FMPs to be available at specific locations at the appropriate stage.

T&C 14 requires MNR to respond in writing to all written and verbal comments and submissions which are received during the preparation of an FMP. T&C 7 requires that, beyond the formal requirements of the four stages of public consultation, additional efforts are directed to consultation with affected / interested parties during the preparation of an FMP. Part of T&C 76 specifically requires consultation with trappers and recreationists in relation to traplines and portage routes.

Aboriginal Consultation

Native communities can participate in the preparation of an FMP through the Forest Management Native Consultation Program or through the standard public consultation process as described in the preceding section. If a Native community chooses to participate in the standard public consultation process, all of the requirements described in the preceding section apply and, upon request, additional special information sessions will be provided for the community at each stage of the process.

If a Native community chooses to participate in the Forest Management Native Consultation Program, there are separate requirements for direct written notices, recipients of notices, the contents of notices, and the information which must be available at each stage of the process.

T&C 8(b) prescribes the requirement for separate direct written notices to each Native community which has chosen the Forest Management Native Consultation Program. T&C 6 and the associated Appendix 2(A) identify the recipients for the separate direct written notices. T&C 8(b) and the associated Appendix 3(A) prescribe the content requirements of the separate direct written notices. T&Cs 9(b), 10(b) and 11(b) repeat the requirement for separate direct written notices to each Native community which has chosen the Forest Management Native Consultation Program, and describe each stage of the process and its purpose. T&C 8(b) and the associated Appendix 4(A) prescribe the information that must be available at each stage. In particular, the Native Background Information Report required by T&C 19 and Appendix 6, and the Report on Protection of Identified Native Values required by T&C 57 and Appendix 10, must be available at the appropriate stages.

T&C 4

(a) The Ministry of Natural Resources shall establish a structure of committees to review, advise, guide and improve the timber management planning process and to increase the level of public input to and public scrutiny of timber management planning in the province.

  (ii) In addition to the public consultation provisions set out in Conditions 8 to 12, a number of local citizens representing a range and balance of interests shall be afforded expanded opportunities to participate in the timber management planning process through membership in a Local Citizens Committee (LCC). MNR shall establish at least one LCC for each district and where needed, one for every management unit in the Area of the Undertaking.

(b) The composition and terms of reference of the senior Provincial Policy Committee, the Provincial Technical Committee, the Regional Advisory Committee and the Local Citizens Committee are described in Appendix 1.

T&C 6

Notification of various stages of timber management planning and operations shall be given to the appropriate persons, including interested and affected persons and organizations and the general public. The identification of those persons and organizations is provided in Appendix 2.

T&C 7

In addition to the public consultation provisions set out in Conditions 8 to 12, the timber management planning team shall make diligent efforts to ensure ongoing public participation throughout the timber management planning process. As affected members of the public are identified, the planning team shall make reasonable efforts to communicate with those persons to solicit their input into the timber management planning process and to facilitate contact between them and the Local Citizens Committee. In addition, members of the public shall be afforded the opportunity to arrange for meetings with representatives of the planning team and the Local Citizens Committee at any time during the timber management planning process. Reasonable opportunities to meet planning team members during non-business hours shall be afforded.

T&C 8

(a) Formal public consultation opportunities shall be provided at four stages in the timber management planning process for each Timber Management Plan, as set out in Conditions 9 to 12. These opportunities include an option for native communities to choose additional consultation and documentation opportunities, which is referred to in these terms and conditions as the Timber Management Native Consultation Program (i.e. Conditions 10(b)(i) and 11(b)(i) and Appendix 10). [SEE FIGURE 1]

(b) Public Notices shall be issued at each stage of the public consultation process. The timing and contents of the Public Notices are set out in Appendix 3. Details of the minimum information available at each stage of the public consultation process are set out in Appendix 4.

1

T&C 9

(a) Stage One of the public consultation process shall commence with the issuance of an Invitation to Participate. This Notice shall be issued before any proposals for operations have been developed, and shall list the information available at this stage of the process, and provide direction on how to obtain access to this information. The purpose of this public consultation opportunity is to advise the public that timber management planning is commencing for the forest management unit; to provide access to information to be used in the timber management planning process; and to request contributions to the background information base to be used in timber management planning.

(b) At the time of issuance of the Invitation to Participate, a separate Invitation to Participate and a Notice of Community Meeting shall be issued to each native community in or adjacent to the forest management unit. The purpose of this consultation opportunity is to review and solicit comments on the draft Native Background Information Report (described in Condition 19); to determine whether additional information is required and to arrange for its collection; and to provide an opportunity for the native community to choose between the standard public consultation provisions of the timber management planning process and the Timber Management Native Consultation Program.

2

T&C 10

(a) Stage Two of the public consultation process shall commence with the issuance of the Notice of the First Information Centre. This Information Centre shall be held during development of proposals for the Timber Management Plan, before decisions are made concerning timber management operations. The purpose of this public consultation opportunity is to provide a formal opportunity for public comment on the assembly and analysis of background information and the evaluation of alternatives; to generate additional alternatives for consideration; and to request additional contributions to the information base and other information to be considered in decision-making. A Preliminary Plan Summary shall be made available and distributed. It is described in Appendix 4, part A, section 2(a).

(b) (ii) Timber Management Native Consultation Program: In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, at the time of issuance of the Notice of the First Information Centre, a Preliminary Report on Protection of Identified Native Values (described in Condition 57) shall be provided to the native community. A Notice shall be issued to the native community advising of the agreed forum for consideration of the Report. The purpose of this stage of consultation is for the community to comment on the Report and all other analysis of background information and the evaluation of alternatives for the plan; to generate additional alternatives for consideration; and to provide information on the native communities' preferred alternatives;

(ii) Where a native community has chosen to participate in the standard public consultation process, MNR shall, with whatever modifications are necessary, arrange a special Information Centre at a location convenient to that community, upon request.

3

T&C 11

(a) (Stage Three of the public consultation process shall commence with the issuance of a Notice of Draft Plan Review and Notice of the Second Information Centre. This Information Centre shall be held upon completion of the draft Timber Management Plan and MNR's preliminary review of that draft Timber Management Plan. The purpose of this public consultation opportunity is to provide a formal opportunity for public review of, and comment on, the proposed operations before MNR finalizes its review of the draft Timber Management Plan. A Draft Plan Summary shall be made available and distributed. It is described Condition 58, Appendix 11 and Appendix 4, part A, section 3(a)(iv).

(b) (i) Timber Management Native Consultation Program: In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, at the time of issuance of the Notice of Draft Plan Review and Notice of the Second Information Centre, a Final Report on Protection of Identified Native Values (described in Condition 57) shall be provided to the native community. A Notice shall be issued to the native community advising of the agreed forum for consideration of the Report. The purpose of this stage of consultation is for the community to comment on the Report before MNR finalizes its review of the draft Timber Management Plan.
(ii) Where a native community has chosen to participate in the standard public consultation process, MNR shall, with whatever modifications are necessary, arrange a special Information Centre at a location convenient to that community, upon request.

1

T&C 12

Stage Four of the public consultation process shall commence with the issuance of a Notice of Plan Inspection. This Notice shall be issued upon MNR approval of the Timber Management Plan. The purpose of this public consultation opportunity is to advise the public that timber management planning has been completed for the forest management unit, and to provide a formal opportunity for the public to examine the results of the planning process. An Approved Plan Summary shall be made available and distributed. It is described in Condition 58 and Appendix 11.

2

T&C 13

MNR shall provide various maps to assist public understanding of timber management planning. All such maps shall be adequate for the purpose of showing the locations of past and planned operations. These Maps shall be easy to read and their format shall be standardized across the Area of the Undertaking.

- (a) Public consultation: (Stage One) Invitation To Participate the following maps shall be provided:
  - (i) a map of a Forest Management Unit pursuant to the requirements of Appendix 3, part A, section 1(a)(ii), Appendix 3, part C, section 1(b) and Appendix 11, section 1(a);
  - (ii) a values map pursuant to the requirements of Condition 17 and Appendix 5;
  - (iii) a native values map pursuant to the requirements of Appendix 6, section 1(c) and Appendix 10, section 1(b);
  - (iv) a 20-year eligibility map, including primary road corridors pursuant to the requirements of Conditions 29 and 30 and Appendix 4, part A, section 1(b)(v);
- (b) Public consultation: (Stage Two) First Information Centre, as well as the maps from (a), the following maps shall also be provided:
  - (i) a five-year preliminary "areas selected for operations map" pursuant to the requirements of Conditions 35 and 40(b);
  - (ii) a mapped summary of past and proposed harvest operations and alternative road corridors, pursuant to Condition 18;
  - (iii) a mapped summary of ranked areas proposed for harvest for the five-year term of the Timber Management Plan pursuant to Condition 34.
  - (iv) a mapped summary of the proposed areas of operations and alternative road corridors pursuant to Appendix 3, part A, section 2(a)(v) and Appendix 4, part A, section 2(k).
- (c) Public consultation: (Stage 3, Draft Plan) Second Information Centre, the following maps shall be provided:
  - (i) a mapped summary of the operations planned at the draft Plan stage for the five-year term of the Timber Management Plan pursuant to the requirements of Condition 58 and Appendix 11, section 2; and,
  - (ii) a map of areas eligible for insect pest management pursuant to Condition 69, Appendix 14 and Appendix 4, part B, section 2(a)(ii).
- (d) There shall also be provided the following maps (Stage Four, Approved Plan Inspection):
  - (i) a mapped summary of the operations planned for the five-year term of the approved

Timber Management Plan pursuant to the requirements of Condition 58 and Appendix 11, section 2.

1

T&C 14

MNR shall respond in writing, in a responsive and timely way, to all written comments and submissions received from any person or group during the preparation of a Timber Management Plan. This requirement shall also apply to all verbal comments if a written response has been requested. In those responses, MNR shall provide an explanation of the results of the consideration of the comments and submissions.

2

T&C 18

MNR shall produce a "proposed and past harvest operations map" for each forest management unit, at a scale appropriate to portray information about the locations of past, proposed and/or approved harvest operations for the two past five-year Timber Management Plans, the Plan currently in force and the proposed Plan. This map shall also show alternative road corridors for each forest management unit. This map shall be in summary form for the public to take home and will be made available at the First Information Centre.

3

T&C 34

At the First Information Centre MNR shall provide a map depicting those areas meeting the selection criteria for harvest during the five-year term of the Plan. This map shall indicate preference by rank of those areas proposed for harvest and the reasons for the ranking accorded. This map shall be in summary form for the public to take home.

4

T&C 57

In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, during the development of the Timber Management Plan the timber management planning team shall produce a Report on Protection of Identified Native Values. The contents of the Report are listed in Appendix 10.

5

T&C 65

(a) A copy of each draft and approved Timber Management Plan, and the accompanying supplementary documentation, shall be provided to the appropriate regional office of the Ministry of Environment and Energy. A copy of the summary of each approved Timber Management Plan shall be provided to the Environmental Assessment Branch of the Ministry of Environment and Energy.

(b) Each draft Timber Management Plan and the accompanying supplementary documentation, the draft Plan summary, and the preliminary list of required alterations shall be available for public review during normal business hours at the district office, the appropriate MNR regional office and a location in Toronto provided by MNR, after the Second Information Centre has been held. Reasonable opportunities for access to the documentation during non-business hours shall be afforded.

(c) Upon final approval of the Plan, each approved Timber Management Plan and the accompanying supplementary documentation, and the Plan summary shall be available for public inspection at the locations noted in Condition 65(b). The approved Plan shall be available at those locations for the five-year term of the Plan.

6

T&C 76

MNR shall provide in the Code of Practice for Timber Management Operations in Riparian Areas, that *operators ensure that trails used for accessing and working traplines, and portage routes used for recreational purposes be rehabilitated and unobstructed following timber operations. MNR and operators shall consult with affected trappers and recreationists prior to operations in order to identify such trails and portages.*

1

Appendix 1: Committees

D: The Local Citizens Committee:

4. Composition and Formation:
The Local Citizens Committee shall be a standing committee. Membership shall be by appointment from the district manager. The majority of appointments shall be drawn from nominations from interest groups. The main interests represented on this committee should include:

- *(a) local business;*
- *(b) tourism industry;*
- *(c) anglers and hunters;*
- *(d) native communities;*
- *(e) forest industry;*
- *(f) naturalists;*
- *(g) municipalities;*
- *(h) trappers and other resource users;*
- *(i) other Crown Land recreationalists;*
- *(j) forest industry trade unions;*
- *(k) woodsworkers;*
- *(l) small independent loggers;*
- *(m) Chamber of Commerce member or Economic Development Officer;*
- *(n) other interest groups; and*
- *(o) the general public.*

5. Purposes:
The purpose of the Local Citizens Committee is to participate as an integral part of the timber management planning process by:

- *(a) ensuring that all local interests are effectively communicated to all others involved in timber management planning;*
- *(b) increasing the effectiveness of the four-stage public consultation process (described in Conditions 9 to 12), by participating in its implementation, and in the consideration of any additional formal public consultation opportunities that would be useful, in the context of local circumstances and needs;*
- *(c) participating in the development, identification and description of objectives, strategies, problems and issues (described in Conditions 22 and 23).*
- *(d) participating in the development of the values map(s) (described in Condition 17);*
- *(e) promoting integration of all interests by participating in the evaluation of trade-offs to be made during the planning process and the resolution of problems, differences and conflicts as early as possible in the planning process;*
- *(f) assisting in monitoring the performance of Timber Management Plan implementation; and*
- *(g) providing advice to the district manager when discretionary decisions must be made (e.g.: the categorization of amendments, and responses to bump up requests).*

6. Local Citizens Committee input to the Planning Team and to Insect Pest Management:

- *(a) The Local Citizens Committee may nominate a representative of the Committee to serve as a member of the timber management planning team.*
- *(b) Other members of the Local Citizens Committee may attend planning team meetings as observers.*
- *(c) Joint meetings of the Local Citizens Committee and the planning team shall be held at agreed upon stages of the planning process.*
- *(d) The planning team and representatives of the Local Citizens Committee shall attend public information centres.*

(e) The member of the Local Citizens Committee who serves as the representative on the planning team shall be invited to serve on the district or regional Multi-Disciplinary Committee which produces the district insect pest management program.

7. Procedural Matters:

The Local Citizens Committee shall develop its own rules with respect to any procedural matters required to meet its responsibilities during timber management planning and Plan implementation. These matters include such things as frequency of and attendance at meetings and Information Centres, and circulation of information among members of the Local Citizens Committee.

8. Disbursements and Support:
   - (a) Members of the Local Citizens Committee shall be reimbursed by MNR for reasonable out-of-pocket expenses in connection with their participation.
   - (b) The LCC member serving on the planning team shall be provided a reasonable per diem fee for attendance at planning team meetings.
   - (c) MNR shall provide the necessary office support, e.g., secretarial support and typing of report for supplementary documentation, for the affairs of the Committee to be conducted efficiently and effectively.
   - (d) Each MNR district manager shall provide to the Local Citizens Committee any information required by the Committee. This information will be provided as it becomes available, in order to ensure achievement of the Local Citizens Committee purposes. Without limiting the generality of the foregoing, each Local Citizens Committee will be provided with the following materials for the relevant Management Unit, in summary form and at a time no later than the invitation to participate:
     - (i) Background information;
     - (ii) Data describing non-timber resources; and
     - (iii) data describing the timber resource.

9. Reports and Records:
   - (a) All documentation produced by the Local Citizens Committee shall be available for review by interested persons. In particular, the Local Citizens Committee shall prepare a report concerning their activities during Timber Management Plan preparation; the problems and issues addressed by them; and their assessment of the effectiveness of the Committee structure and recommendations for change, if any and an assessment of the co-operation provided to the committee by the Ministry. This report shall be summarized by the LCC and provided as follows:
     - (i) in an early version for inclusion in the Preliminary Plan Summary to be distributed at the First Information Centre (Condition 10(a) and Appendix 4, part A, section 2(a));
     - (ii) in final form for inclusion in the Draft Plan Summary (Conditions 11(a) and 58; Appendix 4, part A, section 3(a)(iv); Appendix 11) and revised, if necessary for the final Plan;
     - (iii) as part of the Timber Management Plan Summary (Conditions 12 and 58; Appendix 11, section 1(d).
     - (iv) the full report of the Local Citizens Committee shall form part of the supplementary documentation of the Timber Management Plan (Condition 56, Appendix 9, section 1(f).
   - (b) Timber Management Plans shall contain a brief statement on the first page reporting generally the Local Citizens Committee's agreement or disagreement with the Plan and indicating that the Local Citizens Committee's report is available in the Supplementary Documentation to the Plan.

1

Appendix 2: Public Notice Requirements: Service

Service Of Notice With Respect To Timber Management Planning

A: Notices for Timber Management Plans:

1. Public notice requirements for each Public Notice referred to in Conditions 9 to 12 and Appendices 3 and 4 shall include direct written notice from the MNR district manager to:
   - (a) Local and regional offices of relevant government ministries and agencies and in particular to:

(i) local school boards,
(ii) local medical officers of health,
(iii) each municipality and planning board, and where appropriate, local services board and Chambers of Commerce,
(iv) Regional Manager of Engineering and Right-of-Way, Regional Office, Ministry of Transportation,
(v) Director, Design and Development Division - Transmission, Main Office, Ontario Hydro,
(vi) Regional Office, Ministry of Environment and Energy,
(vii) Regional Office, Ministry of Culture, Tourism and Recreation,
(viii) Regional Office, Ministry of Northern Development and Mines,
(ix) Ontario Native Affairs Secretariat,
(x) Department of Indian Affairs (Canada), and
(xi) Department of Fisheries and Oceans (Canada);

(b) Native communities and Band Councils of each Indian Reserve in or adjacent to the forest management unit;
(c) Appropriate Treaty Organizations and Tribal Councils;
(d) Known local and provincial organizations and associations;
(e) Members of the Local Citizens Committee; and
(f) Individual members of the public with a known interest in timber management planning for the management unit, including those persons who may be directly affected by timber management operations during the five-year term of the Timber Management Plan, such as tourist operators and trappers. MNR shall make all reasonable efforts to identify individuals who may be directly affected. Without limiting the generality of the foregoing, reasonable efforts shall include contacting Band Councils and native communities in or adjacent to the forest management unit, and consulting records of registered trap-line areas and mining activity.

2. Timber Management Native Consultation Program: In those cases where a native community has chosen to be involved in the Timber Management Native Consultation Program, any additional notices required shall be provided to:
(a) the native community, by serving the Band Councils of each Indian Reserve or other identified community representatives,
(b) individual members of the community with a known interest in timber management planning for the forest management unit,
(c) appropriate Treaty Organizations and Tribal Councils,
(d) members of the Local Citizens Committee,
(e) local planning or services boards,
(f) Regional Office, Ministry of Environment and Energy,
(g) Regional Office, Ministry of Culture, Tourism and Recreation,
(h) Regional Office, Ministry of Northern Development and Mines,
(i) Ontario Native Affairs Secretariat, and
(j) Department of Indian Affairs (Canada).

3. (a) Direct verbal communication of the required information, with whatever modifications are necessary, may serve as an additional form of notification, where appropriate.
(b) The provisions of The French Language Services Act, 1986, *as amended from time to time, shall govern the translation of Notices into the French language.*
(c) Notices to Band Councils and native communities and organizations will be provided in English and the appropriate native languages, unless the specific Band Council, native community or organization advises that notice in native languages is not necessary.

4. (a) Public notice requirements for each notification shall also include general public notices in the form of advertisements in the local media, including publications in the native media.
(b) Where such notices are published in print media, the contents of the notices shall conform with the requirements set out in Appendix 3, part E.

1

Appendix 3: Public Notice Requirements: Timing And Notice Contents

[Note: the minimum information available at each stage of the Public consultation process is listed in

appendix 4] - All references to days in these Public Notice requirements are to consecutive calendar days.

Timing and contents of notices with respect to timber management planning

A: Notices for Timber Management Plans:
Public notice shall be given by the MNR district manager at each of the four stages of the public consultation process for each Timber Management Plan:

1. *Stage One: Invitation to Participate:*
   - (a) *The Invitation to Participate shall contain the following information:*
     - (i) *a statement that the purpose of this public consultation opportunity is to provide access to information to be used in the timber management planning process, and to obtain contributions to the background information base to be used in timber management planning;*
     - (ii) *a map of the forest management unit for which the Timber Management Plan will be prepared, containing sufficient detail to allow for identification of the location of the forest management unit;*
     - (iii) *an outline of the subject matter to be covered by the Plan (normally the harvest, renewal and tending operations, consideration of concerns of other users/uses of the forest, and the locations of roads);*
     - (iv) *a summary of the schedule for all formal public consultation opportunities which will be provided during the preparation of the Timber Management Plan, and a statement encouraging public involvement as early as possible in the planning process;*
     - (v) *a statement that further information about the timber management planning process, information to be used in the preparation of the Timber Management Plan, and background information about the forest management unit may be obtained from the district office;*
     - (vi) *a statement that information to be used in the preparation of the Timber Management Plan, and background information about the forest management unit will be displayed for public review at the district office for a specified time period, and that the information is also available during non-business hours by appointment;*
     - (vii) *a statement requesting interested persons to provide additional background information or to state issues or concerns which need to be addressed during the planning process to the district manager and/or the Local Citizens Committee;*
     - (viii) *the identity of the Plan author and other members of the planning team and information concerning how to contact the district manager, the Plan author and a representative of the Local Citizens Committee;*
     - (ix) *a brief explanation of how comments received will be handled under relevant provisions of the* Freedom of Information and Protection of Privacy Act; *and*
     - (x) *a statement that there is an opportunity at any time during the timber management planning process to make a request to the Minister of Environment and Energy for a bump-up of specific proposed timber management activities to the status of an individual environmental assessment.*
   - (b) *An Invitation to Participate and a Notice of Community Meeting(s) shall also be provided to each native community in or adjacent to the forest management unit at the same time as the standard Invitation to Participate.*
     In addition to the information required in the standard Invitation to Participate, the Notice shall contain the following information:
     - (i) *a statement that the purpose of the Community Meeting is to review and solicit comments on the draft Native Background Information Report; to determine whether additional information is required and to arrange for its collection; and to provide an opportunity for the native community to choose between the standard public consultation provisions of the timber management planning process and the Timber Management Native Consultation Program;*
     - (ii) *the location, date and time of the Community Meeting; and*

  - (iii) a statement that the native community is asked to advise MNR whether they wish to become involved in the Timber Management Native Consultation Program within 60 days after the Community Meeting.

2. Stage Two: Notice of First Information Centre

   A Notice of the First Information Centre shall be provided at least 30 days before the date of the Information Centre.

   (a) In addition to the information required by Appendix 3, part A, section 1(a) (ii),(iii),(viii), (ix) and (x), the Notice of the First Information Centre shall contain the following information:
   - (i) a statement that the purpose of this public consultation opportunity is to provide formal opportunities for public comment on the assembly and analysis of background information and the evaluation of alternatives; to generate additional alternatives for consideration; and to request additional contributions to the information base and other information to be considered in decision-making;
   - (ii) the location(s), date(s) and time(s) of the Information Centre(s), and a statement that the purpose of the Information Centre(s) is to provide an opportunity for interested persons to comment before decisions are made and a draft Timber Management Plan is submitted to MNR for review and approval;
   - (iii) a statement that the analysis of background information and the evaluation of alternatives may also be reviewed after the Information Centre, by arranging an appointment through the district manager;
   - (iv) details of any further formal public consultation that may be scheduled as a result of recommendations by the Local Citizens Committee;
   - (v) a statement that a mapped summary of the proposed areas of operations and alternative road corridors may be obtained from the district office;
   - (vi) a statement that interested persons are asked to provide comments within 90 days of the issuance of this Notice (for the assistance of the public, a specific date shall be provided); and
   - (vii) the projected date for draft Plan submission.

   (b) In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, MNR and the native community (in conjunction with the company's Plan author, where appropriate) shall agree upon the forum to be used for discussion of the Preliminary Report on the Protection of Identified Native Values. At the time of issuance of the Notice of the First Information Centre, MNR shall provide to the native community a Notice of Review of the Preliminary Report on the Protection of Identified Native Values. In addition to the information required by Appendix 3, part A, section 1(a) (ii),(iii),(viii), (ix) and (x), the Notice shall contain the following information:
   - (i) a statement that the purpose of this stage of consultation is for the community to review and comment on the Report and all other analysis of background information and evaluation of alternatives for the Plan; to generate additional alternatives for consideration; and to obtain information on the native communities' preferred alternatives;
   - (ii) a statement that the Report may be obtained from the district office or the Band Office;
   - (iii) the location(s), date(s) and time(s) of any further Community Meeting(s) agreed to by the planning team and the native community, or the information required to inform community members about means of participating in any other Consultation Forum agreed to;
   - (iv) the name of the native community contact person and an MNR contact person;
   - (v) a statement that the native community is asked to provide comments within 90 days of the issuance of this Notice (for the assistance of the native community, a specific date shall be provided); and
   - (vi) the projected date for draft Plan submission.

3. Stage Three: Notice of Draft Plan Review and Notice of the Second Information Centre

   The Notice of Draft Plan Review and Notice of the Second Information Centre shall be provided at least 30 days before the date of the Information Centre.

   (a) In addition to the information required by Appendix 3, part A, section 1(a) (ii),(viii),(ix) and (x), the Notice shall contain the following information:

- *(i) a statement that the purpose of this public consultation opportunity is to provide formal opportunities for public review of, and comment on, the proposed operations before MNR finalizes its review of the draft Timber Management Plan;*
- *(ii) a statement that the draft Timber Management Plan, accompanying supplementary documentation, and MNR's preliminary list of required alterations, are available for review;*
- *(iii) the location(s), date(s) and time(s) of the Information Centre(s), and a statement that the purpose of the Information Centre(s) is to provide an opportunity for interested persons to review and comment on the draft Timber Management Plan. The notice shall also indicate any other location(s), date(s) and time(s) in which the draft Timber Management Plan can be reviewed, including the district office at specified times and by appointment during non-business hours, and the additional locations listed in Condition 65;*
- *(iv) details of any further formal public consultation that may be scheduled as a result of recommendations by the Local Citizens Committee;*
- *(v) a statement that the summary of the draft Timber Management Plan may be obtained from the district office;*
- *(vi) a statement that interested persons are asked to provide comments within 90 days of the issuance of this Notice (for the assistance of the public, a specific date shall be provided); and*
- *(vii) the projected date for MNR approval of the Plan.*

(b) In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, MNR and the native community (in conjunction with the company's Plan author, where appropriate) shall agree upon the forum to be used for discussion of the Final Report on the Protection of Identified Native Values. At the time of issuance of the Notice of Draft Plan Review and Notice of the Second Information Centre, MNR shall provide to the native community a Notice of Review of the Final Report on the Protection of Identified Native Values. In addition to the information required by Appendix 3, part A, section 1(a) (ii),(viii),(ix) and (x), the Notice shall contain the following information:

- *(i) a statement that the purpose of this stage of consultation is for the community to review and comment on the Report before MNR finalizes its review of the draft Timber Management Plan;*
- *(ii) a statement that the Report may by obtained from the district office or the Band Office;*
- *(iii) the location(s), date(s) and time(s) of any further Community Meeting(s) agreed to by MNR and the native community, or the information required to inform community members about means of participating in any other Consultation Forum agreed to;*
- *(iv) the name of the native community contact person and the MNR contact person;*
- *(v) a statement that the native community is asked to provide comments within 90 days of the issuance of this Notice (for the assistance of the native community, a specific date shall be provided); and*
- *(vi) the projected date for MNR approval of the Plan.*

4. Stage Four: Notice of Plan Inspection

A Notice of Plan Inspection shall be provided upon MNR approval of the timber management Plan. This notice shall be provided at least 75 days before Plan implementation.

In addition to the information required by Appendix 3, part A, section 1(a) (ii), (viii) and (ix), this notice shall contain the following information:

- *(a) a statement that the purpose of this public consultation opportunity is to advise the public that planning has been completed for the forest management unit, and to provide a formal opportunity for the public to examine the results of the planning process;*
- *(b) the location(s), date(s) and time(s) in which the MNR-approved Timber Management Plan can be inspected, including the district office at specified times and by appointment during non-business hours, and the additional locations listed in Condition 65;*
- *(c) a statement that the summary of the MNR-approved Timber Management Plan may be obtained from the district office; and*
- *(d) a statement that there is a 30-day period following the public notice, during which there is a final opportunity for interested persons to make a request to the Minister of Environment and Energy for a bump-up of specific proposed timber management activities to the status of an*

individual environmental assessment, and that a response to the request will be provided by the Minister of Environment and Energy within 45 days after the 30-day period.

Notices In Public Print Media

E: Notices for Timber Management Plans, Contingency Plans, Amendments and Insect Pest Management Programs:

1. Notices published in public print media for Timber Management Plans, Contingency Plans, amendments and insect pest management programs shall normally contain the following information, in concise non-technical language:
- *(a) A statement of the purpose of the notice;*
- *(b) A map of the relevant forest management unit/district;*
- *(c) a description of the subject matter of the planning exercise;*
- *(d) the schedule for any additional formal public consultation opportunities;*
- *(e) the method by which the public may obtain additional information on the planning exercise;*
- *(f) a request for comments;*
- *(g) the names of appropriate contact people;*
- *(h) a brief explanation of how comments received will be handled under relevant provisions of the Freedom of Information and Protection of Privacy Act; and*
- *(e) a statement on the relevant opportunities for bump-up.*

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Appendix 4: Information Available For Public Consultation

Information Available With Respect To Timber Management Planning

A: Timber Management Plans:

1) Stage One: Invitation to Participate and Native Community Meeting:

The following information shall be available when the Invitation to Participate is issued:
- *a) Background information about the forest management unit:*
    - *(i) the current version of the values map (or maps) for the forest management unit;*
    - *(ii) a list of references to the sources of the information which is summarized on the values map (or maps) or otherwise available in the data base; identification of the methodologies used for data collection; and identification of those subjects for which data are recognized as being incomplete or missing;*
    - *(iii) a list of references to the sources of the information used to update the current Forest Resource Inventory data; and*
    - *(iv) the draft Native Background Information Report.*
- *b) Results of preliminary analysis concerning the following subjects:*
    - *(i) the draft Report on Past Forest Operations;*
    - *(ii) objectives, strategies, problems and issues for timber and non-timber values;*
    - *(iii) Silvicultural Ground Rules;*
    - *(iv) Maximum Allowable Depletion;*
    - *(v) Eligibility criteria for harvest, renewal and tending operations for the 20-year period of the Timber Management Plan, and associated "eligibility maps"; and*
    - *(vi) Selection criteria for harvest, renewal and tending operations during the five-year term of the Timber Management Plan.*
- *c) Other relevant documents:*
    - *(i) The Reports of Past Forest Operations for the previous three Timber Management Plans for the forest management unit;*
    - *(ii) A copy of the current Timber Management Plan for the forest management unit, and copies of all Annual Work Schedules and Annual Reports with respect to the current Timber Management Plan which have been prepared to date;*
    - *(iii) A list of current audits or reports prepared by or for MNR pertaining to the forest management*

unit (e.g. FMA Fifth-Year Reviews), and audits or reports prepared by or for MNR pertaining to forestry generally in the Province (e.g. Annual Report on Timber Management and State of the Forest Report which are described in Conditions 82 and 84 respectively), and a copy of each of those audits or reports;

(iv) Other relevant planning documents (e.g. District Land Use Guidelines, District Fisheries Management Plans), policies, agreements, and any other relevant information available with respect to existing management objectives for non-timber values in the geographical area of the forest management unit;
(v) A list of MNR's implementation manuals and a copy of each of those manuals; and
(vi) Copies of MNR's brochure on public consultation in timber management planning and the brochure described in Condition 91.

d) In the material displayed at the district office, MNR shall include a request for additional information relating to natural resource features, land uses and values which potentially could be affected by timber management activities, where such information is not displayed on the values map. In addition, identification and means of contacting planning team members and Local Citizens Committee members will be provided.

e) In addition to the draft Native Background Information Report, all of the foregoing information shall be available for the first native Community Meeting, with whatever modifications are necessary in the circumstances.

2) Stage Two: First Information Centre and Native Consultation Forum for Review of Preliminary Report on Protection of Identified Native Values:

At the First Information Centre the most current versions of the background information listed in Appendix 4, part A, section 1(a) and all other relevant documents listed in Appendix 4, part A, section 1(c) shall be available. In addition, the following information shall be available to the public:

a) a Preliminary Plan Summary presenting highlights of the Report of Past Forest Operations and preliminary versions of the following sections of the Timber Management Plan Summary, Appendix 11, section 1:
   (i) a map of the forest management unit for which the Timber Management Plan will be prepared, containing sufficient detail to allow for identification of the forest management unit,
   (ii) a general description of the forest,
   (iii) description of management responsibilities (i.e. FMA, Crown or Company Management Unit), and a description of the forest industry supplied from the management unit,
   (iv) LCC summary report,
   (v) Names of the district manager, Plan author and all members of the Local Citizens Committee,
   (vi) Consultation schedule,
   (vii) Comment form, and
   (viii) Bump-up notice;
b) Analysis of information concerning the following subjects:
   (i) Report of Past Forest Operations,
   (ii) Objectives, strategies, problems and issues for timber and non-timber values,
   (iii) Maximum Allowable Depletion,
   (iv) Silvicultural Ground Rules;
c) Eligibility criteria for harvest, renewal and tending operations for the 20-year period of the Plan, and associated "eligibility maps"
d) the Preliminary Report on Protection of Identified Native Values (where required);
e) any public comments and submissions received to date and any responses to those comments and submissions;
f) In the material displayed at the Information Centre, MNR shall include a a a request for additional information relating to natural resource features, land uses and values which potentially could be affected by timber management activities, where such information is not displayed on the values map. The district manager, the Plan author, the planning team, and representatives from the Local Citizens Committee shall attend the Information Centre, and will be so identified;
g) In those cases where the native community has chosen to be involved in the Timber Management

Native Consultation Program, in addition to the Preliminary Report on Protection of Identified Native Values, all of the foregoing information shall be available, with whatever modifications are necessary in the circumstances;

- h) *Selection criteria for harvest, renewal and tending operations during the five-year term and associated preliminary "areas selected for operations maps."*
- i) *the harvest, renewal and tending program for the five-year term of the Plan;*
- j) *evaluation of alternatives for:*
  - (i) *each primary access road which will be required for the 20-year period of the Plan;*
  - (ii) *each primary and secondary access road which will be required for the five-year term of the Plan; and*
  - (iii) *operational prescriptions for Areas of Concern.*
- k) *a mapped summary of the proposed areas of operations and alternative road corridors specified in Appendix 3, part A, section 2(a)(v), a mapped summary of past and proposed harvest operations and alternative road corridors pursuant to Condition 18 and a mapped summary of ranked areas proposed for harvest pursuant to Condition 34. This map or maps shall be in summary form for the public to take home.*

3. *Stage Three: Second Information Centre and Native Consultation Forum for Review of Final Report on Protection of Identified Native Values:*
   - a) *At the Second Information Centre, the following information shall be available:*
     - (i) *The draft Timber Management Plan, and accompanying Supplementary Documentation;*
     - (ii) *The MNR preliminary list of required alterations;*
     - (iii) *The Final Report on Protection of Identified Native Values; and*
     - (iv) *The Draft Plan Summary, to be distributed to all who attend.*
   - b) *In addition, other relevant information shall be available, including the information described in Appendix 4, part A, sections 1(a) and (c).*
   - c) *The district manager, the Plan author, the planning team, and representatives from the Local Citizens Committee shall attend the Information Centre, and will be so identified.*
   - d) *In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, in addition to the Report on Protection of Identified Native Values, all of the foregoing information shall be available, with whatever modifications are necessary in the circumstances.*

4. *Stage Four: Plan Inspection*

   The following information shall be available when the Notice of Plan Inspection is issued:
   - a) *the approved Timber Management Plan, and accompanying Supplementary Documentation;*
   - b) *the summary of the approved Timber Management Plan; and*
   - c) *a list of major changes to the draft Plan, to be distributed to all who attend.*

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Appendix 10: Report On Protection Of Identified Native Values

Preliminary Report on Protection of Identified Native Values:

1. *In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, during the development of the Timber Management Plan, the planning team shall produce a Preliminary Report on Protection of Identified Native Values. The Report shall consist of the following components:*
   - (a) *a mapped summary of the proposed areas of operations and alternative road corridors;*
   - (b) *the most current updated versions of the values map and the native values map;*
   - (c) *an evaluation of alternative prescriptions for specific Areas of Concern associated with the native values identified in the Native Background Information Report affected by the anticipated operations for the five-year term;*
   - (d) *an evaluation of the alternative road corridors of potential interest to the native community; and*
   - (e) *a comment sheet and the name of a native community contact person and an MNR contact person.*

Final Report on Protection of Identified Native Values:

2. In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, upon completion of the draft Timber Management Plan, the planning team shall produce a Final Report on Protection of Identified Native Values. The Report shall consist of the following components:

- *(a) the summary of the draft Timber Management Plan;*
- *(b) the most current updated versions of the values map and the native values map;*
- *(c) in order to communicate the results of previous consultation, the selected prescriptions for the specific Areas of Concern associated with the native values identified in the Preliminary Report on Protection of Identified Native Values; the reasons for the selected prescriptions; and any associated MNR preliminary required alterations; and*
- *(d) the selected road locations of potential interest to the native community, reasons for the selected locations and use management strategies; and any associated MNR preliminary required alterations.*

3. Copies of both the Preliminary and Final Report on Protection of Identified Native Values will be provided to the Ontario Native Affairs Secretariat.

Implementation Experience

Local Citizens Committees

Local Citizens Committees have been key contributors in forest management planning process. Planning team members and MNR District Managers have indicated that Local Citizens Committees are providing valuable input to planning efforts. Results of a questionnaire sent to Local Citizens Committees during the Forest Management Planning Improvement Project indicate approximately two thirds of Local Citizens Committees felt they were effective in providing advice, and assisting in the preparation and implementation of forest management plans. Local Citizens Committees generally have felt comfortable with their role, and because of their closeness to the process, tend to have a greater satisfaction with the planning process than the general public.

Local Citizens Committee members frequently have been involved in more than one plan, and have indicated that there is a major commitment of their volunteer time. Most Local Citizens Committees have chosen to have a member on the planning team. Some Local Citizens Committee members have expressed concerns about the affiliation of other Local Citizens Committee members with the forest industry.

Public Consultation

Public consultation is a key component of the forest management planning process. Meetings and workshops with practitioners and Local Citizens Committee members to discuss potential improvements to public consultation resulted in confirmation that MNR is undertaking consultation at the appropriate stages of planning. While the purpose of public consultation at the different stages of the planning process was not clear to everyone, the current consultation process has met public needs. However, the general public has indicated that they find the information presented at information centres to be too technical, overwhelming in volume and not relevant to most people who attend information centres. A Progress report on T&C 114(a)(vii), Overview of Public Consultation, is included in Section 5.0 Progress Reports.

Aboriginal Consultation

Aboriginal consultation is an important component of the forest management planning process. In general, Aboriginal communities have identified the current forest management planning process as long, complicated and very technical. The optional Forest Management Native Consultation Program was used by individual Aboriginal communities in many cases, with varying results.

Many Aboriginal communities feel that the formal process, with the use of information centres, does not address their preferred way of communicating. Many Aboriginal communities are reluctant to provide native values information because of concern for possible destruction or impairment of those values. In many cases where they have provided native values information, they have requested that the information be kept confidential and not made available to the public. A Progress report on T&C 114(a)(vii), Overview of Public Consultation, is included in Section 5.0 Progress Reports.

Analysis of Implementation Experience

Local Citizens Committees

In addition to the requirement of the current EA Approval, Local Citizens Committees are also required under the *Crown Forest Sustainability Act*. Local Citizens Committees provide a valuable advisory function to the planning team, and most find their role, which continues to evolve, to be important. Local Citizens Committee members have increased their knowledge of forest management planning as a result of their involvement, and will continue to do so. Membership is an ongoing issue for some Local Citizens Committees, due to the substantial volunteer time commitments. MNR recommends that the role and function of the Local Citizens Committee be maintained.

MNR proposes to consolidate the requirements of T&Cs 4(a)(i), 4(b) and the associated Appendix 1(D) into a single new term and condition. This new term and condition sets out the requirements for Local Citizens Committees in MNR's forest management planning process.

Recommended Term and Condition

MNR recommends that T&Cs 4(a)(i), 4(b) and the associated Appendix 1(D) be deleted and replaced with the following:

5. **A Local Citizens Committee, comprised of local citizens representing a range and balance of interests, shall be established in accordance with the requirements of Section 13 of the *Crown Forest Sustainabiltiy Act*, for each MNR District or management unit.**
   (a) **The Local Citizens Committee shall be a standing committee. Members shall be appointed by the MNR District Manager. Persons directly employed by the Sustainable Forest Licensee preparing the local forest management plan, are not eligible members unless no other person is nominated to represent their local interest group. The majority of appointments shall be drawn from nominations from local interest groups. The main interests represented on this committee should include, where possible:**
      (i) **local business;**
      (ii) **tourism industry;**
      (iii) **anglers and hunters;**

- (iv) Aboriginal communities;
- (v) forest industry;
- (vi) naturalists;
- (vii) municipalities;
- (viii) trappers and other resource users;
- (ix) other Crown Land recreationalists;
- (x) forest industry trade unions;
- (xi) woodsworkers;
- (xii) small independent loggers;
- (xiii) mineral sector;
- (xiv) Chamber of Commerce member or Economic Development Officer;
- (xv) other interest groups; and
- (xvi) the general public.

(b) The purpose of the Local Citizens Committee is to participate as an integral part of the forest management planning process by:

- (i) ensuring that all local interests are effectively communicated to all others involved in forest management planning;
- (ii) increasing the effectiveness of the public consultation process, by participating in its implementation, and in the consideration of any additional formal public consultation opportunities that would be useful, in the context of local circumstances and needs;
- (iii) participating in the development, identification and description of objectives, strategies, problems and issues.
- (iv) participating in the development of the values map(s);
- (v) promoting integration of all interests by participating in the evaluation of trade-offs to be made during the planning process and the resolution of problems, differences and conflicts as early as possible in the planning process;
- (vi) assisting in monitoring the performance of Forest Management Plan implementation;
- (vii) providing advice to the MNR District Manager when discretionary decisions must be made (e.g., the categorization of amendments, and responses to requests for individual environmental assessments); and
- (viii) providing input into independent forest audits for the management unit.

(c) Local Citizens Committee shall provide input to the planning team and to insect pest management as follows:

- (i) The Local Citizens Committee may nominate a representative of the Committee to serve as a member of the forest management planning team.
- (ii) Other members of the Local Citizens Committee may attend planning team meetings as observers.
- (iii) Joint meetings of the Local Citizens Committee and the planning team shall be held at agreed upon stages of the planning process.
- (iv) The planning team and representatives of the Local Citizens Committee shall attend public information centres.
- (v) The member of the Local Citizens Committee who serves as the representative on the planning team shall be invited to serve on the multi-disciplinary team which produces the district insect pest management program.

(d) The Local Citizens Committee shall develop its own rules with respect to any procedural matters required to meet its responsibilities during forest management planning and plan implementation. These matters include such things as frequency of and attendance at meetings and Information Centres, and circulation of information among members of the Local Citizens Committee.

(e) Disbursements and Support

(i) Members of the Local Citizens Committee shall be reimbursed by MNR for reasonable out-of-pocket expenses in connection with their participation.

(ii) The Local Citizens Committee member serving on the planning team shall be provided a reasonable per diem fee for attendance at planning team meetings.

(iii) MNR shall provide the necessary office support, e.g., secretarial support and typing of report for supplementary documentation, for the affairs of the Committee to be conducted efficiently and effectively.

(iv) Each MNR District Manager shall provide to the Local Citizens Committee any available information reasonably required by the Committee. This information will be provided as it becomes available, in order to ensure achievement of the Local Citizens Committee purposes. Without limiting the generality of the foregoing, each Local Citizens Committee will be provided with the following materials for the relevant Management Unit, in summary form and at a time no later than the invitation to participate:

- background information;
- data describing non-timber resources; and
- data describing the timber resource.

(f) Reports and Records

(i) All documentation produced by the Local Citizens Committee shall be available for review by interested persons. In particular, the Local Citizens Committee shall prepare a report concerning their activities during Forest Management Plan preparation; the problems and issues addressed by them; and their assessment of the effectiveness of the Local Citizens Committee structure and recommendations for change, if any and an assessment of the co-operation provided to the Local Citizens Committee by MNR. This report shall be summarized by the Local Citizens Committee and provided as follows:

- in an early version for inclusion in the Preliminary Forest Management Plan Summary to be distributed at the First Information Centre;
- in final form for inclusion in the Draft Forest Management Plan Summary and revised, if necessary for the final Forest Management Plan;
- as part of the Forest Management Plan Summary; and
- the full report of the Local Citizens Committee shall form part of the supplementary documentation of the Forest Management Plan.

(ii) Forest Management Plans shall contain a brief statement on the first page reporting generally the Local Citizens Committee's agreement or disagreement with the Forest Management Plan and indicating that the Local Citizens Committee's report is available in the Supplementary Documentation to the Forest Management Plan.

(g) The Forest Management Planning Manual may provide additional guidance for Local Citizens Committees.

Public Consultation

The analysis of the current public consultation process has indicated that appropriate opportunities for public consultation are provided in the current forest management planning process. The public's role in the forest management planning process should be maintained, as well as public access to related information.

With the change to a FMP for a ten-year period with two five-year operational terms, the new proposed public consultation process will build on the previous process. Based on our implementation experience with the current public consultation process, MNR is recommending retaining the current five-stage public consultation process for the preparation of the ten-year FMP. A public consultation process, which builds on the consultation undertaken for the FMP for the ten-year period, is required for the planning of operations for the second five-year operational term. Figure 2 depicts the public consultation schedule being recommended by MNR.

Figure 2.

MNR proposes to consolidate the requirements of T&Cs 6 to 14, 57, 65, the associated Appendices 2(A), 3(A), 3(E), 4(A), 10 and parts of T&Cs 18, 34 and 76, which are related to consultation with the general public, into a single new term and condition. This new term and condition sets out the requirements for the standard public consultation process in the preparation of an FMP. This consolidated new term and condition includes changes to the current requirements in T&Cs 8 to 13 to require a five-stage public consultation process in the preparation of an FMP every ten years, and the addition of a new three-stage public consultation process for the planning of operations for the second five-year operational term.

Recommended Term and Condition

MNR recommends that T&Cs 6 to 14, 57, 65, the associated Appendices 2(A), 3(A), 3(E) and 4(A), 10 and parts of T&Cs 18, 34 and 76 be deleted and replaced with the following:

6. (a) In the preparation of the Forest Management Plan for the ten-year period, formal public consultation opportunities shall be provided at five stages, as described in the Forest Management Planning Manual. General public media notices and direct written notices to interested and affected persons and organizations shall be issued at each stage of the public consultation process. The notice for each stage shall include:

(i) an explanation of the purpose of the stage of consultation, and its relationship to other stages;

(ii) identification of the forum (e.g., information centre) for consultation, where applicable;

(iii) a description of the information available;

(iv) a request for contributions to the background information base and comments on material available for review; and

(v) identification of MNR, forest company and Local Citizens Committee contacts.

(b) The information that shall be available at the appropriate MNR offices and forest company offices and/or public forums at each stage will build with successive stages of the public consultation process. The information shall include, where appropriate for the stage in the process, background information, results of analyses, preliminary and final text and maps, the draft Forest Management Plan and summary of the draft Forest Management Plan, and the approved Forest Management Plan and summary of the approved Forest Management Plan.

(c) MNR shall ensure that a written response is provided, in a responsive and timely way, to all written comments and submissions received from any person or group during the preparation of a Forest Management Plan. This requirement shall also apply to all verbal comments if a written response has been requested. In those responses, MNR shall ensure that an explanation of the results of the consideration of the comments and submissions is provided.

(d) In addition to the formal requirements of the public consultation process, members of the public shall be afforded the opportunity to consult directly with representatives from the planning team and Local Citizens Committee during the preparation of a Forest Management Plan.

(e) As part of the planning of operations for the second five-year operational term of the Forest Management Plan, formal public consultation opportunities shall be provided at three stages (i.e. review of proposed operations, review of planned operations and inspection of MNR-approved operations) as described in the

Forest Management Planning Manual. Formal public consultation will be conducted in accordance with (a) to (d) of this term and condition, with appropriate modifications.

Aboriginal Consultation

Aboriginal peoples, representatives of an Aboriginal treaty organization, practitioners and stakeholders who participated in the Forest Management Planning Improvement Project have indicated a strong interest in having more involvement of Aboriginal people in forest management planning.

To provide for increased involvement of Aboriginal people in forest management planning, each Aboriginal community will have an opportunity for a representative to participate on the planning team. This will provide Aboriginal communities with more involvement in the forest management planning process and will enhance identification of potential effects and the design of protection and mitigation strategies to eliminate or minimize impacts on Aboriginal values.

In addition to involvement on the forest management planning team, MNR is proposing to replace the current optional Forest Management Native Consultation Program with a new provision for the development of a customized Aboriginal consultation process. This provision will provide the opportunity to better meet the needs of each community, through earlier and continued involvement in plan preparation, and to improve the exchange of information with Aboriginal communities.

MNR proposes to consolidate the requirements of T&Cs 6 to 14, 57 and 65, the associated Appendices 2(A), 3(A), 3(E), 4(A) and 10, and parts of T&Cs 10, 18, 34 and 76, which are related to provisions for Native consultation, into a single new term and condition. This new term and condition sets out the requirements for consultation with Aboriginal peoples in the preparation of an FMP.

This consolidated term and condition includes changes to the current requirements in T&Cs 8 to 13. It adds a requirement for MNR and the Sustainable Forest Licensee to make reasonable efforts to meet with each individual Aboriginal community in or adjacent to the management unit, early in the forest management planning process, before any formal public consultation commences. The purpose of such a meeting is to develop an appropriate means of consultation to address the community's interests, and may result in the design of a customized consultation process.

Where MNR, the Sustainable Forest Licensee and the Aboriginal community are unable to reach an understanding regarding a customized consultation process, the standard public consultation process will be applied.

Recommended Term and Condition

MNR recommends that T&Cs 6 to 14, 57 and 65, the associated Appendices 2(A), 3(A), 3(E) and 4(A) and 10, and parts of T&Cs 10, 18, 34 and 76 be deleted and replaced with the following:

7. **The Forest Management Planning Manual shall describe provisions for Aboriginal consultation in the development of a forest management plan, including the following:**

(a) Prior to the commencement of formal public consultation in the preparation of a Forest Management Plan, planning team representatives shall make reasonable efforts to meet with individual Aboriginal communities in or adjacent to the management unit to develop an appropriate approach for Aboriginal consultation. The approach shall be used for both the preparation of the Forest Management Plan for the ten-year period, and planning of operations for the second five-year operational term.

(b) The requirements of the immediately preceding term and condition regarding public consultation (i.e., requirements for public notice, consultation forums, information availability, written responses to comments and submissions, and direct consultation with affected and interested parties) shall apply to Aboriginal consultation. In addition, a Report on the Protection of Identified Aboriginal Values shall be part of the information available at the appropriate stages for Aboriginal consultation.

(c) The requirements of (a) and (b) of this term and condition also apply to the preparation of contingency plans, minor and major amendments to Forest Management Plans and contingency plans, and insect pest management programs, with whatever modifications are necessary in the circumstances.

(d) In the event that an appropriate approach regarding Aboriginal consultation is unable to be reached by the time formal public consultation is scheduled to begin, the requirements of the immediately preceding term and condition regarding public consultation shall be applied.

3.1.4 Issue Resolution and Bump-Up

Current Requirements

T&Cs 62(e) to (h), 64, 70 and 71, and the associated Appendix 15 of the current EA Approval prescribe the requirements of the issue resolution procedure which can be invoked by interested parties during forest management planning, and the bump-up procedure which enables interested parties to request that the Minister of Environment and Energy order an individual environmental assessment of specific timber management activities. The issue resolution procedure applies in the preparation of FMPs, amendments to FMPs, and the planning of insect pest management programs. The bump-up procedure applies in the preparation of FMPs, major amendments to FMPs, and the planning of insect pest management programs.

T&C 64 prescribes the steps in the issue resolution procedure which applies during the planning of forest management operations, and includes requirements for the production of written decisions by MNR District Managers and MNR Regional Directors within specified timeframes. T&C 62(e) to (h) expands on the requirements of T&C 64(f) with respect to the steps in the procedure which involve the MNR Regional Director.

T&C 70 and Appendix 15 prescribe the steps in the bump-up procedure which apply at any time during the planning of forest management operations, and also after an MNR approval decision, prior to the plan becoming final. T&C 71 expands on the requirements of Appendix 15, by providing for no decision by the Ministry of Environment and Energy until at least 30 days following an MNR FMP approval decision. As well, T&C 71 excludes operations from areas which are the subject of a bump-up request until after a resolution of the bump-up request.

T&C 62

(e) Where a person has requested a formal review by the regional director any other person known to be directly affected by the request shall be notified that formal review of a specific Timber Management Plan decision has been requested. In conducting his review, the regional director shall also solicit and consider the views of the Local Citizens Committee, the Plan author and the district manager.

(f) The regional director shall provide a written decision with reasons to the affected parties and to the Local Citizens Committee.

(g) The documentation produced in the review shall be included in the supplementary documentation which accompanies the approved Timber Management Plan, and in the event of a bump-up request concerning that issue, shall form part of any record produced by MNR to the Ministry of Environment and Energy.

(h) The regional director shall complete any such review before MNR approval of the Plan

T&C 64.

Where there is an issue during the preparation of a Timber Management Plan, plan amendment, insect pest management program, or a bump-up request, any person concerned about the issue shall follow this issue resolution procedure in order to ensure that the issue is dealt with fairly, fully and promptly.

(a) The concerned person shall tell the Plan author about the issue, preferably in writing, and offer a proposed solution.

(b) The Plan author shall meet with the person in order to resolve the issue. A resolution to the concern shall be appropriately recorded pursuant to the Area of Concern process (Conditions 41 to

44) or in supplementary documentation to the Plan (Appendix 9, section 1(h)). If these discussions do not produce a resolution, the Plan author shall communicate the issue in writing to the MNR district manager and to the Local Citizens Committee.

(c) The district manager shall arrange and attend a meeting of the Plan author, the concerned person and one or more members of the Local Citizens Committee in order to seek a resolution. If it is helpful to achieving a resolution, the district manager shall provide for a site visit to be taken.

(d) If a resolution has not been achieved, the district manager shall ask each of the Plan author, the complainant and the Local Citizens Committee to recommend their proposed solutions in writing within 15 days. The district manager shall make a decision on the issue within 15 days of receiving the submissions, and shall send a copy of the decision to the regional director, the person concerned and the Local Citizens Committee.

(e) Written submissions from all parties involved, as well as any recommendations from the Local Citizens Committee, shall be included in the supplementary documentation which accompanies the Timber Management Plan or Plan amendment (Appendix 9, section 1(h)). This documentation shall form part of any record produced by MNR to the Ministry of Environment and Energy and Energy if there is a bump-up request.

(f) If the person concerned is dissatisfied with the decision of the district manager, a request may be made for a review by the regional director. The request shall be made within 30 days of receiving the district manager's decision. The regional director will consider the views of the Local Citizens Committee, the Plan author and the district manager. The regional director shall provide a decision with written reasons for adopting or rejecting the decision of the district manager within 15 days.

(g) The schedule specified for issue resolution may be compressed where necessary for insect pest management program issues.

1

T&C 70

A "bump-up" request is a request from any person to the Minister of Environment and Energy for the designation of specific proposed timber management activities to the status of an individual environmental assessment under The Environmental Assessment Act, R.S.O. 1990, c. E.18. A request may be made during the preparation of each Timber Management Plan; each major amendment to an approved Timber Management Plan; and each program for insect pest management. The process governing bump-up requests is set out in Appendix 15.

2

T&C 71

The Ministry of Environment and Energy and Energy shall not determine a bump-up request sooner than 30 days following MNR approval of the Plan and Notice of Plan inspection. Subject to the provisions of Appendix 15, the lands subject of an outstanding issue or a bump-up request shall be excluded from operations objected to until resolution of the bump-up request.

3

Appendix 15: Bump-Up Procedure

1. The bump-up procedure may be initiated at any time during the planning process, but not later than 30 days following the final public notice with respect to each Timber Management Plan, each major amendment to an approved Timber Management Plan, and each program for insect pest management.
2. Any person who has a concern with respect to specific proposed timber management activities may initiate the bump-up procedure by requesting the Minister of Environment and Energy to direct MNR to undertake an individual environmental assessment of those activities. The request shall be in writing, and shall describe the nature of the concern and the reasons for the request. The Ministry of Environment and Energy shall provide a copy of the request to the Minister of Natural Resources, the MNR district manager and the Plan author immediately upon receipt of the request.
3. The Minister of Environment and Energy shall consider the request and before making his decision, shall provide specific notice to the Minister of Natural Resources to respond to the bump-up request within 15 days. The decision of the Minister of Environment and Energy will normally be

made within 45 days after the last opportunity to make a bump-up request. In the case of insect pest management programs which include proposals for projects involving aerial application of insecticides, the decision of the Minister of Environment and Energy will normally be made within 30 days of the receipt of the response from the Ministry of Natural Resources and if this deadline cannot be met the Minister of Environment and Energy shall provide the reason for the delay to the Minister of Natural Resources, the MNR district manager, the Plan author and the person requesting the bump-up.

4. *If a bump-up is requested while planning is ongoing, the planning exercise may proceed while the Minister of Environment and Energy considers the request.*
5. *If the Minister of Environment and Energy does not agree to the bump-up request, the Minister shall give written notice to the Minister of Natural Resources, the MNR district manager, the Plan author and the person requesting the bump-up that the request has been refused, together with reasons for the refusal.*
6. *If the Minister of Environment and Energy agrees to the bump-up request, the Minister shall give written notice to the Minister of Natural Resources, the MNR district manager, the person requesting the bump-up and the Plan author (where appropriate) that MNR will be required to prepare and submit an individual environmental assessment for review and approval under the* Environmental Assessment Act, *R.S.O. 1990, c. E.18. The specific timber management activities, and the areas of the management unit which are affected by the approved bump-up request shall be identified. In such circumstances, planning may continue and partial or conditional approval of activities may be granted by MNR, in respect of activities and areas unaffected by the approved bump-up request, with the concurrence of the Director of the Environmental Assessment Branch, Ministry of Environment and Energy.*
7. *Where there remains an outstanding bump-up request to the Minister of Environment and Energy at the time that activities are scheduled for implementation, partial or conditional approval of activities may be granted by MNR, upon notice to the bump-up requestor and with the concurrence of the Director of the Environmental Assessment Branch, Ministry of Environment and Energy, to permit appropriate operations to proceed in respect of activities and areas unaffected by the outstanding request.*

Implementation Experience

The issue resolution procedure has been used frequently during the forest management planning process. Practitioners and participants in the planning process have indicated that it is beneficial to have a formal process to deal with issues which arise, since the resulting focussed effort can help to identify solutions. Plan authors have indicated that a formal process helps to bring closure to some issues. The documentation associated with the issue resolution procedure also helps others to understand how decisions have been made.

Our experience has demonstrated the issue resolution procedure was often not initiated early enough in the forest management planning process. When issues arose late in the planning process, there have been serious timing problems when trying to complete all stages of the issue resolution procedure. As a result, there have been delays in plan review and approval, and contingency plans have been required to enable operations to proceed.

Practitioners have indicated a need to clarify the relationship between the issue resolution procedure and the opportunity to request an individual environmental assessment. In particular, there is a need to identify the point at which the issue resolution procedure should be concluded and the point at which it is appropriate to request an individual environmental assessment. A Progress Report for T&C 114(a)(vii) on Overview of Public Consultation is included in Section 5.0.

The bump-up procedure has also been used by the public during the forest management planning process to request individual environmental assessments of proposed operations in forest management plans. Frequently, the issue resolution procedure was not used prior to initiation of the bump-up procedure. As well, the opportunity to request a bump-up at any time during the planning process often resulted in people requesting a bump-up rather than resolving the issue informally with the plan author or through the use of the issue resolution process. As a result, it was often necessary to go back in the process to address the issue, affecting the timely completion and approval of forest management plans. Several bump-up requests were made on issues which were outside of the scope of forest management planning (e.g., requests for changes in land use). A Progress Report for T&C 114(a)(iii) Bump-up Requests is included in Section 5.0.

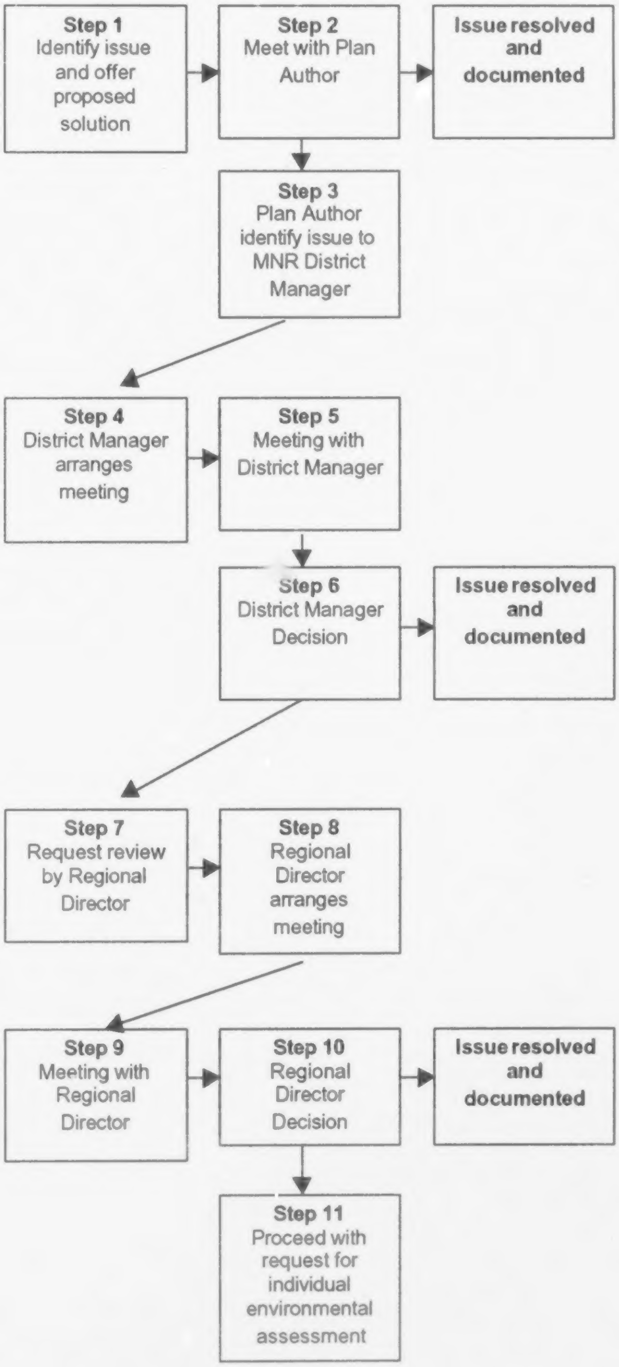
Analysis of Implementation Experience

Implementation experience has indicated that there is a continued need for a formal process to resolve issues that arise during forest management planning. As well, there is a need to better integrate the process for resolving issues with the process for requesting an individual environmental assessment. MNR is recommending integration of the two processes, with clarification of the steps in each of the processes and when they would apply and in particular, which steps of the issue resolution procedure apply when issues arise late in the planning process.

Improvements also include encouraging the completion of the issue resolution process before requesting an individual environmental assessment. In addition, the steps in the process have been clarified in relation to the schedule for plan preparation and approval. MNR's recommended changes to the issue resolution process and opportunities to request an individual environmental assessment are depicted in Figures 3 and 4.

Figure 3.

Figure 4. Forest Management Planning - Issue Resolution Process – Simplified View


Step 1
Identify issue and offer proposed solution
Step 2
Meet with Plan Author
Issue resolved and documented
Step 3
Plan Author identify issue to MNR District Manager
Step 4
District Manager arranges meeting
Step 5
Meeting with District Manager
Step 6
District Manager Decision
Issue resolved and documented
Step 7
Request review by Regional Director
Step 8
Regional Director arranges meeting
Step 9
Meeting with Regional Director
Step 10
Regional Director Decision
Issue resolved and documented
Step 11
Proceed with request for individual environmental assessment

Plan Author Stage

Phase I: Preparation of FMP

- Prior to the draft plan being made available to the public, issue resolution process begins with the Plan Author

Phase II: Preparation of Operations for 2nd five-year term

- Prior to the planned operations being made available to the public, issue resolution process begins with the Plan Author

MNR District Manager Stage

Phase I: Preparation of FMP

- During the public review of the draft plan, issue resolution process begins with the MNR District Manager

Phase II: Preparation of Operations for 2nd five-year term

- During the public review of the planned operations, issue resolution process begins with the MNR District Manager

MNR Regional Director Stage

Phase I: Preparation of FMP

- After the completion of the public review of the draft plan, issue resolution process begins with the MNR Regional Director

Phase II: Preparation of Operations for 2nd five-year term

- After the completion of the public review of planned operations, issue resolution process begins with the MNR Regional Director

Request an Individual Environmental Assessment

MNR proposes to consolidate the requirements of T&Cs 62(e) to (h), 64, 70 and 71, and the associated Appendix 15, into a single new term and condition. This new term and condition sets out the requirements of the issue resolution process which can be used by interested persons during the planning of forest management operations. It also sets out the process for interested persons to request that the Minister of Environment and Energy order an individual environmental assessment of specific proposed forest management activities.

This consolidated term and condition includes changes to the current requirements in T&Cs 62(e) to (h) and 64 to enable only the steps of the issue resolution process which involve the MNR Regional Director to apply, if the procedure is used after the draft plan is available for public review. This consolidated term and condition also includes changes to the current requirements in T&Cs 70 and 71 and Appendix 15 to enable interested persons to request that the Minister of Environment and Energy order an individual environmental assessment of specific proposed forest management activities only at the time of public inspection of an MNR-approved FMP, or MNR-approved major amendment to an FMP, or MNR-approved insect pest management program, and to provide for the Minister of Environment and Energy's decision to be made within 45 days after MNR's response to the Minister of Environment and Energy on the request.

Recommended Term and Condition

MNR recommends that T&C 62(e) to (h), 64, 70 and 71, and the associated Appendix 15 be deleted and replaced with the following:

8. **The Forest Management Planning Manual shall describe provisions for a process to resolve issues and to address requests for an individual environmental assessment of specific proposed forest management activities in the plan, as follows:**
   (a) **If a person has an issue during the preparation of a Forest Management Plan, an issue resolution process, as described in the Forest Management Planning Manual, shall be followed. That process shall require written submissions from the concerned person, including a description of the issue and a proposed solution. Opportunities shall be provided for the involvement of the Local Citizens Committee, and there shall be a requirement for a written decision from the plan author or the MNR District Manager or the MNR Regional Director. That process shall provide for the necessary interaction among the person requesting the issue resolution, the plan author, the MNR District Manager and the MNR Regional Director and shall be responsive to the schedule for the preparation, review and approval of a Forest Management Plan.**
   (b) **During the preparation and review of the forest management plan for the ten-year period, any request for issue resolution shall be dealt with through progressive steps as follows:**
      (i) **For any requests received prior to the draft plan being available for public review, the issue resolution process shall begin with the plan author.**
      (ii) **For any requests received during the public review of the draft plan, the issue resolution process shall begin with the MNR District Manager.**
      (iii) **For any requests received after the completion of the public review of the draft plan, the issue resolution process shall begin with the MNR Regional Director.**
      (iv) **The last date to request the issue resolution process shall be 30 days following the completion of the public review of the draft plan.**
   (c) **During the planning of operations for the second five-year operational term, the**

following applies:

(i) For any requests received prior to the planned operations being available to the public, the issue resolution process shall begin with the plan author.

(ii) For any requests received during the public review of the planned operations, the issue resolution process shall begin with the MNR District Manager.

(iii) For any requests received after the completion of the 30-day public review of planned operations, the issue resolution process shall begin with the MNR Regional Director.

(iv) The last date to request the issue resolution process shall be 30 days after the completion of the public review of the planned operations.

(d) The requirements of the issue resolution process shall also apply to contingency plans, minor or major amendments to Forest Management Plans and contingency plans, and insect pest management programs, with whatever modifications are necessary.

(e) Commencing with the public inspection of an MNR-approved Forest Management Plan for the ten-year period, and the public inspection of the MNR-approved operations for the second five-year operational term, there shall be a 30-day period for any person to make a written request to the Minister of Environment and Energy, to order an individual environmental assessment of specific proposed forest management activities in the plan. The Minister of Environment and Energy shall notify the MNR District Manager and MNR Regional Director of the request, and MNR shall normally have 15 days to respond to the Minister of Environment and Energy on the request. The Minister of Environment and Energy shall normally decide on the request within 45 days of MNR's response to the Minister of Environment and Energy. If this deadline cannot be met, the Minister of Environment and Energy shall provide the reason for the delay and the expected timeframe for a decision, to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the plan author and the person requesting an individual environmental assessment.

(f) The opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific proposed forest management activities shall also apply to major amendments to Forest Management Plans and insect pest management programs, with appropriate modifications as necessary. The Minister of Environment and Energy shall notify the MNR District Manager and MNR Regional Director of the request, and MNR shall normally have 15 days to respond to the Minister of Environment and Energy on the request. The Minister of Environment and Energy shall normally decide on the request within 30 days of MNR's response to the Minister of Environment and Energy. If this deadline cannot be met, the Minister of Environment and Energy shall provide the reason for the delay and the expected timeframe for a decision to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the plan author and the person requesting an individual environmental assessment.

(g) Where there remains an outstanding individual environmental assessment request to the Minister of Environment and Energy at the time that activities are scheduled for implementation, partial or conditional approval of activities may be granted by the MNR Regional Director, upon notice to the individual environmental assessment requestor and with the concurrence of the Director of the Environmental Assessment and Approvals Branch, Ministry of Environment and Energy, to permit appropriate operations to proceed in respect of activities and areas unaffected by the outstanding request.

(h) If the Minister of Environment and Energy agrees to the request for an individual environmental assessment, the Minister of Environment and Energy shall give written notice to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the person requesting the individual environmental assessment, and the plan author, that MNR will be required to prepare and submit an individual environmental assessment for review and approval under the *Environmental Assessment Act.* The specific proposed forest management activities and the areas of the management unit that are affected by the individual environmental assessment request shall be identified. In such circumstances, partial or conditional approval of activities may be granted by the MNR Regional Director, in respect of activities and areas unaffected by the individual environmental assessment request, with the concurrence of the Director of the Environmental Assessment and Approvals Branch, Ministry of Environment and Energy.

3.1.5 Background Information and Management Unit Description

Current Requirements

T&Cs 15 to 17, 19 to 21, the associated Appendices 5 to 8, and parts of T&Cs 18, 77, 103(e) and 104 of the current EA Approval prescribe the background information which must be available for each management unit for use in the preparation of an FMP, and for use in developing the forest description component of an FMP.

T&C 15 prescribes the requirement for updated Forest Resource Inventory data; and T&C 16 prescribes the requirement for fisheries and wildlife inventory information. T&C 17 and Appendix 5 prescribe the requirement for a values map which identifies the locations of natural resource features, land uses and values on the management unit which must be considered in timber management planning. Values maps also include all sites that contain old growth red and white pine forest communities, as required by part of T&C 103(e). T&C 104 prescribes the requirement to develop or adopt the appropriate methodologies to assess social and economic impacts for use in timber management planning.

T&C 19 and Appendix 6 prescribe the requirement for a Native Background Information Report which summarizes the use of natural resources on the management unit by native communities, and forest management-related problems and issues to those communities. The report also includes a native values map that identifies the location of natural resource features, land uses and values that are used by, or of importance to, those native communities. The report also includes a summary of the results of negotiations, required by T&C 77, to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through timber management planning.

T&C 20 and Appendix 7 identify MNR's current approved implementation manuals, which must be used in the preparation of an FMP.

T&C 21 and Appendix 8 prescribe the content requirements of the Report of Past Forest Operations; and part of T&C 18 prescribes the requirement for a map of past harvest areas for the two previous five-year terms and approved harvest areas in the current FMP.

T&C 15

Forest Resource Inventory data shall be available for each forest management unit for use in timber management planning and shall be updated by using:

- *(a) the results of the renewal and tending activities for both naturally and artificially regenerated areas in the form of Free-to-Grow Assessments conducted during the previous five-year term; and*
- *(b) depletion information, in the form of harvest data and data concerning natural depletions which occurred during the previous five-year term.*

T&C 16

Fisheries and wild life inventory information shall be available for each forest management unit for use in timber management planning, and shall include:

- *(a) information concerning fish species present, critical fish habitats (e.g. spawning areas), and the slope of shoreland areas;*

(b) information about sites of occurrence of, and/or high value habitat for, threatened and endangered flora and fauna;
(c) information about sites of occurrence of rare flora and fauna;
(d) information about areas of present or future value as habitat for moose, deer or caribou, including:
  (i) an assessment of production capability for moose or caribou; or
  (ii) an assessment of habitat suitability for deer; and
(e) information about sites of occurrence of, and/or areas of present or future high value as habitat for, flora and fauna of local concern.

1

T&C 17

(a) For each Timber Management Plan, MNR shall produce a values map (or series of maps) for the forest management unit. The values map is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in timber management planning, and about which further inventory information is available. The values map is intended to be used primarily for planning purposes, and will also be used to display available information, and to solicit information about natural resource features, land uses and values which may not have been previously identified. The types of information normally portrayed on the values map (or maps) are listed in Appendix 5, part B.
(b) The values map (or maps) will be continuously updated during the preparation and implementation of the Timber Management Plan, as information is assembled.
(c) The values map (or maps) will be available on request from the appropriate MNR district office. The detailed background information for the forest management unit, which is summarized on the values map (or maps), will be maintained at the appropriate district office and be made available on request to any person, except in those cases where publication of the information may be detrimental to the conservation of particular values.
(d) The values map (or maps) shall be prepared at a suitable scale to allow for appropriate resolution of information and for ease of reproduction, and all values maps will use standard symbols for commonly mapped items.

2

T&C 18

MNR shall produce a "proposed and past harvest operations map" for each forest management unit, at a scale appropriate to portray information about the locations of past, proposed and/or approved harvest operations for the two past five-year Timber Management Plans, the Plan currently in force and the proposed Plan. This map shall also show alternative road corridors for each forest management unit. This map shall be in summary form for the public to take home and will be made available at the First Information Centre.

3

T&C 19

MNR and the native communities in or adjacent to the forest management unit (in conjunction with the company's Plan author, where appropriate) shall produce a Native Background Information Report for use in timber management planning. The information to be contained in this Report is listed in Appendix 6.

4

T&C 21

(a) Each Timber Management Plan shall contain a Report of Past Forest Operations, which reports on operations carried out during the five-year term of the previous Plan. The contents of the Report of Past Forest Operations and its analysis of meeting objectives, targets and strategies are listed in Appendix 8.
(b) The Plan author shall prepare a summary that provides an analysis of past operations and the results of the independent audit. The summary will highlight problems, issues and various objectives for access, harvest, renewal and maintenance as well as the proposed strategies to

achieve each objective.

1

T&C 103 (a)

(a) For the purpose of this approval, and until a provincially coordinated general policy setting out an environmentally sound conservation strategy is provided which,

- *(i) Defines old growth white and red pine or deems what is old growth white and red pine, and*
- *(ii) Provides a specific process to identify and plan for the management and conservation of old growth white and red pine,*

Timber Management Plans must record as values pursuant to Appendix 5, part B, section 1(a)(iv) all sites found to contain communities of old growth white and red pine. Where candidate sites are omitted from the values list and values maps, the Plan must record the reasons the site does not constitute old growth white or red pine.

2

T&C 104

Within two years of this approval, MNR shall investigate available analytical methods for assessing social and economic advantages and disadvantages and their applicability to Ontario's timber management operations, and shall develop or adopt appropriate methodologies for use in timber management planning.

3

T&C 107

During the term of this approval, MNR shall continue to examine wildlife habitat supply modelling methodologies, and landscape management methodologies as potential means of addressing biological diversity concerns in timber management planning.

4

Appendix 5: Background Information:

A: Pre-Planning Component

1. Background Information

In addition to the requirements of Conditions 15 and 16 background information shall be assembled and analyzed for each MNR District by each MNR district office (with the assistance of regional staff and the Plan author), and shall include but not be limited to:

- *(a) Provincial Goals and Objectives for the Resource Management Programs in Ontario;*
- *(b) Main Provincial Policies for resource management programs;*
- *(c) Regional Objectives and Targets for resource management programs;*
- *(d) District and Management Unit Objectives and Targets;*
- *(e) Existing approved resource plans;*
- *(f) Provincial Guidelines and other Implementation Manuals;Past Forest Management Audits;*
- *(g) Recommendations of the Advisory Committees referred to in Condition 4;*
- *(h) Other relevant information.*

2. District Manager Responsibilities

(a) Each MNR district manager shall, in conjunction with the regional staff, ensure that the following types of information for each management unit, where available, be provided to the planning team for analysis and review:

- *(i) Moose Population and Habitat Surveys;*
- *(ii) Deer Population and Habitat Surveys;*
- *(iii) Fisheries Data;*
- *(iv) Lake and Aquatic Surveys;*
- *(v) Soil Surveys;*
- *(vi) Forest Ecosystem Classification;*
- *(vii) Identified and Verified Values;*

(viii) Other relevant information.

(b) Each MNR district manager shall prepare a values map for the planning team.

(c) Each MNR district manager shall prepare a brief statement outlining the resource management targets and the success of meeting or movement towards achievement of the targets. Significant problems and issues would be identified and proposed strategies to address specific problems or issues would be presented in summary.

3. Plan Author Responsibility

(a) The Plan author, in conjunction with the planning team, shall assemble and analyze the information pertaining to the timber resource data base. The following information shall be assembled and analyzed:

(i) Administration and Physical Description;
(ii) Forest Resource Inventory;
(iii) Forest Unit Rotation or Cutting Cycle;
(iv) Calculation of the Maximum Allowable Depletion;
(v) Silvicultural Groundrules and Operational Prescriptions;
(vi) Eligibility Criteria for Depletion, Renewal and Maintenance.

B: Values Map Content:

1. A "values map" is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in timber management planning, and about which further inventory information is available. The types of information portrayed on the values map (or maps) will normally include, but are not limited to, the following, where such values have been identified by MNR, the forest industry or by any other person and are verifiable:

(a) Natural Resource Features

(i) Fisheries

- *major fish communities by lake/stream*
- *bait fish lakes*
- *spawning areas*
- *nursery areas*
- *migration areas*
- *headwater lakes*
- *food supply areas*

(ii) Wildlife

- *moose concentration areas (early & late winter)*
- *aquatic feeding areas*
- *mineral licks*
- *calving sites*
- *deer wintering areas (yards)*
- *raptor (i.e. eagle/osprey) nests*
- *heronries*
- *waterfowl nesting areas*
- *important habitats of rare, threatened, and endangered species**
- *caribou migration routes*
- *caribou calving areas*
- *caribou wintering areas*

(iii) Areas of Natural and Scientific Interest, including Candidate Areas of Natural and Scientific Interest (ANSIs)
(iv) Significant communities of flora/fauna including candidate old growth red and white pine forest communities
(v) Classified wetlands (S. Ontario)
(vi) Provincially significant wetlands (N. Ontario)
(vii) Forests

- *tree improvement areas*

- *seed orchards*
- *seed collection areas*
- *genetic test areas*
- *research plots (e.g. provenance test areas)*

(b) Forest Resource Uses/Values

(i) Tourism Establishments

- *main base lodges*
- *outpost camps*
- *commercial boat caches*
- *potential tourism areas*

(ii) Cottaging/Residential Sites or Areas

- *Existing development*
- *Proposed development (from lakeshore management plans)*
- *Remote cottage sites*

(iii) Mineral/Aggregate/Quarry Development

- *pit or quarry permits/licenses*
- *active mining claims*

(iv) Commercial Fur

- *Registered trapline areas*
- *Trapper cabins*

(v) Wild Rice Production Areas

(vi) Crown Land Recreation

- *trapper cabins access points*
- *canoe routes*
- *portage trails*
- *hiking/nature trails*
- *snowmobile trails*
- *cross-country ski trails*
- *approved boat caches*
- *land use permit hunt camps*

(c) Existing and Planned Infrastructure Features such as:

- *Roads and railways*
- *Utilities (pipelines, hydro lines)*
- *Waste and sewage disposal sites*
- *Potable water supply sources, including sites on lakes, rivers and streams identified by any person as being used for water supplies*
- *Communications towers*
- *Airports/airstrips*
- *Logging camps*
- *Mills*

*(d) Cultural Heritage Sites such as:**

- *Cultural landscapes*
- *Structural remains*
- *Archaeological remains*
- *Traditional use sites*

(e) Other Special Land Uses of Local Significance as identified by any person, such as:

- *Areas of significance to local communities such as areas used for traditional or recreational activities;*
- *Boundaries of registered trapline areas;*
- *Reserves and other native communities;*
- *Areas which have been identified as being required as reserve lands or for economic or capital development projects;*
- *Areas used for fuelwood or building materials;*

- *Sites of local archaeological, historical, religious and cultural heritage significance, including native graveyards, spirit sites and burial sites.**
- *Medicinal plants*

(f) Exclusions from the Land Base of the Forest Management Unit including:

- *Patented lands*
- *Federal lands (e.g. Indian Reserves, Department of National Defence Bases, National Parks)*
- *Provincial parks and approved provincial park candidates*
- *Crown land leases (i.e. land use permits, licenses of occupation)*
- *Cemeteries/burial grounds, including native cemeteries and burial grounds**
- *Areas of Natural and Scientific Interest which have been designated as exclusions from the forest management unit*

*** Publicizing The Location Of Certain Values May Be Detrimental To Conservation In Which Case Information Would Not Normally Be Shown On The Values Map.**

1

Appendix 6: Native Background Information Report

1. The Native Background Information Report shall contain:

(a) a summary of past utilization of the timber resource by those native communities;

(b) a summary of past utilization of other resources by those native communities, in particular traditional and commercial hunting, fishing, trapping and gathering;

(c) a native values map and listing which identifies the location of specific natural resource features, land uses and values which are specifically used by, or of importance to, those native communities. In particular, the following features, land uses and values will be mapped:

(i) areas of significance to local native communities such as areas used for traditional or recreational activities;

(ii) boundaries of trapline management areas of those native communities (i.e. all registered trapline areas associated with individual native communities);

(iii) Reserves and other native communities;

(iv) Areas which have been identified as being required as reserve lands or for economic or capital development projects of those native communities;

(v) Areas used by those native communities for fuelwood or building materials; and

*(vi) Sites of local archaeological, historical, religious and cultural heritage significance to those native communities, including native graveyards, spirit sites and burial sites.**

***Publicizing The Location Of Certain Values May Be Detrimental To Conservation In Which Case Information Would Not Normally Be Shown On The Native Values Map.**

(d) a summary of timber management-related problems and issues specific to those native communities, which arose during implementation of the Timber Management Plan for the current five-year term.

2. A copy of the Native Background Information Report will be provided to the Ontario Native Affairs Secretariat.

2

Appendix 8: Report Of Past Forest Operations

1. The Report of Past Forest Operations shall contain the following information concerning implementation of operations on the forest management unit during the five-year term of the previous Timber Management Plan:

(a) Statistical information comparing planned and actual activities for the previous five-year term including:

(i) Area harvested;

(ii) Volume harvested;

(iii) Volume losses due to natural forces categorized according to insects, disease, fire,

blowdown, others;

- *(iv) Area tended and area regenerated and the spending incurred to implement these activities by treatment method including but not limited to site preparation, planting, seeding, natural regeneration and tree improvement support.*
- *(v) Area tended and area treated for protection purposes, by treatment method including but not limited to cleaning: manual, chemical, mechanical; spacing, thinning; stand improvement);*
- *(vi) Tree improvement support;*
- *(vii) Kilometres of primary and secondary access roads constructed and maintained, signed or physically or naturally abandoned;*
- *(viii) Stand listings showing the silvicultural treatment package implemented;*
- *(ix) Annual government revenues from the FMU for stumpage and area fees;*
- *(x) merchantable and unmerchantable timber wastage by volume and species pursuant to condition 78(b)(ii); and,*
- *(xi) average and maximum size of clear cuts;*

(b) a summary of areas assessed for Free to Grow status and areas declared Free to Grow shall be provided by silvicultural treatment package and upon completion of the revision of the Silvicultural Guides pursuant to Condition 94(a) by general standard site type;

(c) a summary of the area inspection reports for the management unit (prepared by MNR), including a description of the types of infractions encountered and actions taken during the term of the Plan, and recommendations for improving compliance, effects and effectiveness on the forest management unit;

(d) a summary of the percentage of Maximum Allowable Depletion actually harvested, by forest unit or working group;

(e) spending for maintenance and construction of primary, secondary and other roads;

(f) a list of administrative, minor and major amendments, and an explanation of the reasons for the amendments;

(g) a summary of audit results relating to the forest management unit;

(h) conclusions on the success of meeting timber management objectives for the forest management unit;

(i) conclusions on the success of meeting non-timber management objectivbes for the forest management unit.

(j) a discussion of significant problems and issues arising during implementation of the Timber Management Plan for the previous five-year term. This discussion will include a description of any undesirable conditions which have been observed in the areas of operations for the previous five-year term, related to timber management activities;

(k) recommendations for the development of the timber management strategies for the next five-year term to address problems and issues identified in the Report of Past Forest Operations, and

(l) a statement of silvicultural effectiveness by working group and silvicultural treatment package shall be provided, and upon completion of the revision of the Silvicultural Guides pursuant to Condition 94(a) by general standard site type.

Implementation Experience

Forest Resource Inventory

The forest resource inventory for each management unit has been updated using the information required by T&C 15. An updated forest resource inventory continues to be very important prior to initiating planning, as it is the fundamental information upon which planning decisions are based and long-term management direction for the management unit is developed. Since the EA Approval in 1994, technology has changed significantly, resulting in an increased ability to store information and update the forest resource inventory. Updated digital forest resource inventories are now readily available and provide for linkages to landscape and eco-site level information.

The Forest Information Manual (MNR 2001a), regulated under the *Crown Forest Sustainability Act* requires that a forest resource inventory be created and maintained for each management unit in Ontario. The Forest Information Manual prescribes the mandatory information and information products required for forest management planning, along with their standards and timelines.

Fisheries and Wildlife Inventory Information

The best available updated fisheries and wildlife inventory information was used in forest management planning. This inventory information has been updated to account for changes in the resource as new information became available. The fisheries and wildlife habitat and values inventory information has been used: in the description of the management unit; to help develop non-timber objectives; and, to update values maps.

Report of Past Forest Operations and Management Unit Annual Reports

The Management Unit Annual Reports have been produced and are available at the initiation of planning, and contain important information on the implementation of the forest management plan. The Report of Past Forest Operations has been produced after completing five years of operations and the related Management Unit Annual Reports. The Reports of Past Forest Operations have summarized important information including forest management activities conducted during the term, conclusions on meeting timber and non-timber objectives, and recommendations on the development of management direction for the next FMP. These reports have then been used as background information for the preparation of the next forest management plan.

Values Maps

Since the EA Approval in 1994, resource values maps have been produced for each management unit. With the development of the Natural Resources Values Information System, values maps have now been standardized across the province. The Natural Resources Values Information System has provided for the efficient collection, storage, retrieval, maintenance and sharing of values information. The forest industry, stakeholders and the general public have had an active role in confirming the location of values and providing new values information for use in forest management planning.

Native Background Information Report

Native Background Information Reports have been produced for each management unit; however, planning teams have been challenged to produce the report for timely use in forest management planning. Where individual Aboriginal communities participated in the preparation of the reports, the quality of the reports was improved. Often communities expressed concern with making their values information and maps available to the public due to the sensitive nature of the information.

Analysis of Implementation Experience

Manuals regulated under the *Crown Forest Sustainabiltiy Act* now provide direction regarding information sources, data attributes and other technical matters related to forest management planning information. The FMP Manual describes the information required to be used in the preparation of a FMP and the Forest Information Manual, addresses comprehensive technical requirements for information and information products required for forest management planning, along with their standards and timelines.

Forest Resource Inventory

The forest resource inventory is the key piece of background information upon which decisions are based in a forest management plan. The forest resource inventory has improved in many areas since the EA Approval in 1994. The forest resource inventory is now available in digital format for all management units, allowing forest managers to consider and analyze spatial objectives. The requirements of the Forest Information Manual will continue to improve the collection and maintenance of the forest resource inventory. An updated forest resource inventory, which allows for derivation of landscape level information, will continue to be a forest management planning requirement and the foundation for describing the forest.

Fish and Wildlife Inventories

Updated fisheries and wildlife inventories are used to assist in describing the management unit, setting objectives and verifying the values requiring protection. The dynamic nature of this information requires continued updates and benefits from the co-operation and input of stakeholders and the general public. These inventories will continue to be required to be available for forest management planning.

Report of Past Forest Operations and Management Unit Annual Reports

Efficient, timely and meaningful reporting is important to the forest management planning process. Conclusions and recommendations contained in the reports are used in various stages throughout the planning process. The information contained in the current Report of Past Forest Operations will continue to be provided as background information to support planning decisions.

Values Maps

Updated values information and maps continue to be very important for use in forest management planning. The Natural Resource Values Information System provides an effective tool to manage the values information and has provided a consistent approach to producing values maps and has improved their availability to resource managers and the public. The regulation of the Forest Information Manual, under the *Crown Forest Sustainability Act,* has provided direction for the collection, updating and storage of values information for forest management planning. Values maps will continue to be required for forest management planning.

Native Background Information Report

The Native Background Information Report provides valuable information for use in the planning process and will continue to be a requirement. The involvement of Aboriginal communities in the preparation of this report is important and will be encouraged.

MNR proposes to consolidate the requirements of T&Cs 15, 16, and 21, Appendix 8 and part of T&C 18 into a single new term and condition. This new term and sets out the requirements for background information to be available for use in the preparation of an FMP.

The requirement for the use of MNR's approved implementation manuals in forest management planning, as described in T&C 20 and Appendix 7, is addressed in Section 3.5.2.1.

Recommended Term and Condition

MNR recommends that T&C 15, 16, and 21, Appendix 8 and part of T&C 18 be deleted and replaced with the following:

9. The following background information shall be available for use in forest management planning, in accordance with the Forest Management Planning Manual:
- **(a) updated forest resource inventory data for the management unit in accordance with the requirements of the Forest Information Manual;**
- **(b) fisheries and wildlife inventory information for the management unit; and,**
- **(c) the most recent Management Unit Annual Reports for the management unit available at the time of planning.**

MNR proposes to consolidate the requirements of T&Cs 17 and 19, Appendices 5 and 6, and parts of T&Cs 103(e), 104 and 107 into a single new term and condition. This new term and condition outlines the requirements for the management unit description in a forest management plan. The background information will be used to provide a current description of the forest, fish and wildlife resources, socioeconomic profiles, Aboriginal values and other values on the management unit.

Recommended Term and Condition

MNR recommends that T&C 17 and 19, Appendices 5 and 6, and parts of T&Cs 103(e), 104 and 107 be deleted and replaced with the following:

10. Each Forest Management Plan shall contain a description of the management unit. The management unit description will be prepared in accordance with the Forest Management Planning Manual and shall contain:
- **(a) a description of the forest, based on updated forest resource inventory data and landscape level information;**
- **(b) a description of fish and wildlife resources based on fish and wildlife inventory and habitat information;**
- **(c) a relevant social and economic description;**
- **(d) an Aboriginal Background Information Report which includes:**
  - **(i) a summary of the use of natural resources on the management unit by Aboriginal communities, in particular hunting, fishing, trapping and gathering;**
  - **(ii) forest management related problems and issues for those communities; and**
  - **(iii) an Aboriginal values map which identifies the location of natural resource features, land uses and values which are used by or of importance to those Aboriginal communities; and**
- **(e) a values map identifying the locations of natural resource features, land uses and values.**
- **(f) A values map is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in forest management planning, and about which further inventory information is available. The types of information portrayed on the values map (or maps) will normally include, but are not limited to, the following, where such values have been identified by MNR, the forest industry or by any other group or person and are verifiable:**

1

Natural Resource Features such as:	
Fisheries	
• Major fish communities by lake/stream • bait fish lakes • spawning areas	• nursery areas • migration areas • headwater lakes and streams • food supply areas
Wildlife	
• moose concentration areas (early & late winter) • moose aquatic feeding areas • mineral licks • calving sites • deer wintering areas (yards) • raptor nests (e.g., eagles, ospreys, red-shouldered hawks, Cooper's hawks)	• heronries • waterfowl nesting areas • important habitats of vulnerable, threatened and endangered species* • caribou migration routes • caribou calving/high summer use areas • caribou wintering areas
Forests	
• tree improvement areas* • seed orchards* • seed collection areas	• genetic test areas* • research plots (e.g., growth and yield plots)*
Forest Resources Uses/Values such as:	
Tourism Establishments	
• main base lodges • outpost camps	• commercial boat caches • potential tourism areas
Cottaging/Residential Sites or Areas	
• existing development • remote cottage sites	• proposed development (from lakeshore management plans)
Mineral/Aggregate/Quarry Developments	
• pit or quarry permits or licences	• active mining claims
Commercial Fur	
• registered trapline areas	• trapper cabins
Crown Land Recreation	
• access points • canoe routes • portage trails • hiking/nature trails	• snowmobile trails • cross-country ski trails • approved boat caches • land use permit hunt camps
Bear Management Areas	
Wild Rice Production Areas	
Existing and Planned Infrastructure Features such as:	
• roads and railways • utilities (pipelines, hydro lines) • waste and sewage disposal sites • airports/airstrips • communications towers	• logging camps • mills • potable water supply sources, including sites on lakes, rivers and streams identified by any person as being used for water supplies
Cultural Heritage Sites *, such as:	
• cultural landscapes • structural remains	• archaeological remains • traditional use sites

Other Special Land Uses of Local Significance as identified by any person, such as:	
• areas of significance to local communities such as areas used for traditional or recreational activities • Reserves and other Aboriginal communities • Areas which have been identified as being required as reserve lands or for economic or capital development projects • Areas of Natural and Scientific Interest • Evaluated wetlands and evaluated wetland complexes	• registered trapline areas • areas used for fuelwood or building materials • sites of local archaeological, historical, religious and cultural heritage significance, including Aboriginal graveyards, spirit sites and burial sites * • medicinal plants • Significant ecological area (e.g. significant woodland, significant flora)
Exclusions from the Land Base of the Management Unit, including:	
• Federal lands (e.g., Indian Reserves, Department of National Defence Bases, National Parks) • Provincial parks, conservation reserves and approved provincial park candidates • Crown land leases (e.g., land use permits, licenses of occupation)	• patented lands • cemeteries/burial grounds, including Aboriginal cemeteries and burial grounds* • Areas of Natural and Scientific Interest which have been designated as exclusions from the management unit

* **Publicizing the location of certain values may be detrimental to conservation, in which case information would not normally be shown on the values map(s).**

3.1.6 Planning Long-term Management Direction

Current Requirements

T&Cs 22, 23, 28 and parts of T&Cs 104 and 107 of the current EA Approval prescribe the requirements for determining the long-term management direction in an FMP. T&C 22 requires quantified timber management objectives to be developed; a discussion of related problems and issues, including insect pest infestations, to be provided; and strategies to address those objectives, problems and issues to be described. T&C 23 requires objectives for non-timber values from other sources to be identified; and a discussion of related problems and issues and strategies to address those objectives, problems and issues to be provided, in an FMP. If non-timber values can be reasonably dealt with through the management of forest cover, objectives for those non-timber values may also be developed in an FMP.

T&C 28 prescribes the requirement for the regulation of the level of forest harvest, through the determination of a Maximum Allowable Depletion for each forest unit.

Part of T&C 104 requires the use of socio-economic analytical methodologies in the determination of the long-term management direction in an FMP. Part of T&C 107 requires the use of wildlife habitat supply modelling methodologies and landscape management methodologies to address biological diversity matters in the determination of the long-term management direction in an FMP.

T&C 22

(a) Each Timber Management Plan shall contain clear statements of timber management objectives developed during timber management planning and a discussion of the related problems and issues which are considered in the Plan. Strategies which address the objectives, problems and issues will be described in the Plan.

(b) Each Plan shall provide measurable and quantifiable objectives for timber production objectives detailing annual levels of production for each of the five years covered by the Plan, for the five-year Plan in total and where possible, for the remaining five year increments of the 20-year planning horizon. These figures shall be broken down by hardwood, conifer and tree species.

(c) Each Plan shall discuss whether insect pest infestations are likely to be a problem during the term of the Plan and whether insect pest management planning is anticipated. Each Plan will describe management strategies for meeting the problem.

T&C 23

(a) Each Timber Management Plan shall identify the management objectives for non-timber values which exist in other plans or policies, and which could be affected by timber management activities to be carried out under the Plan. Problems and issues with respect to those objectives which are related to timber management activities will be described. Timber management strategies intended to assist in meeting those non-timber objectives which involve the manipulation of forest cover will be described in the Plan.

(b) The specific sources of the existing objectives (e.g. District Land Use Guidelines, resource management plans, government agreements with native people) shall be stated, and the geographic area for which those objectives have been developed shall be identified

(c) Where management objectives for non-timber values are not identified in other plans or policies and such non-timber values can reasonably be dealt with in a Timber Management Plan through manipulation of forest cover, Timber Management Plans may determine management objectives for them.

T&C 28

Each Timber Management Plan shall contain the calculation of Maximum Allowable Depletion for each forest unit or working group. The methodology for the calculations shall be described, and the results of the calculations shall be portrayed graphically. The rationales for the chosen Maximum Allowable Depletions shall be provided. At a minimum, calculations shall be performed for the entire rotation period for each forest unit or working group.

T&C 104

Within two years of this approval, MNR shall investigate available analytical methods for assessing social and economic advantages and disadvantages and their applicability to Ontario's timber management operations, and shall develop or adopt appropriate methodologies for use in timber management planning.

T&C 107

During the term of this approval, MNR shall continue to examine wildlife habitat supply modelling methodologies, and landscape management methodologies as potential means of addressing biological diversity concerns in timber management planning.

Implementation Experience

Forest management plans have contained objectives and identified problems, issues and strategies in accordance with EA Approval and the *Crown Forest Sustainability Act*. The *Crown Forest Sustainability Act* has developed the requirements for long term management direction beyond those addressed in the EA Approval. The *Crown Forest Sustainability Act* describes specific requirements relating to management unit objectives. For example, it requires that every FMP contain management objectives relating to: forest diversity, social and economic considerations, provision of forest cover for those values dependent on forest cover, and silviculture.

Forest management plans have determined the area available for harvest by forest unit and have identified the inputs and considerations used in the determination of the harvest levels.

Implementation experience, along with continued development of new analytical methodologies, models and tools, has improved the capability to develop and analyze long-term management direction. Analytical tools are used to evaluate wildlife habitat supply, investigate landscape management opportunities and determine harvest levels and associated silvicultural activity, in support of forest management decisions. These tools have provided forest managers with the ability to investigate and evaluate management scenarios with multiple objectives over time.

A socio-economic model has been developed and is currently used by all planning teams to assess the socio-economic impacts of their management decisions.

Public involvement, including the involvement of Local Citizens Committees, has been valuable in assisting in the establishment of long-term management objectives.

Analysis of Implementation Experience

Establishing measurable objectives is a fundamental part of forest management planning and will continue in accordance with the *Crown Forest Sustainability Act* and the FMP Manual.

As technology and science evolve, the ability to predict the outcome of our decisions becomes more reliable. This new science and information has, and will continue be used to improve our ability to predict outcomes when considering long-term management direction. As new forest management planning tools and methodologies are developed, they assist in the application of the new science and information for forest regulation, social and economic analysis, wildlife habitat supply and landscape management.

The proposed change to a ten-year plan period will provide a longer timeframe to assess the progress in achieving objectives, draw conclusions and influence the management decisions for the next plan. MNR endorsed forest regulation methodologies will be used to determine the ten-year Available Harvest Area for every forest unit on the management unit.

MNR proposes to consolidate the requirements of T&Cs 22, 23, 28, and parts of T&Cs 104 and 107 into a single new term and condition which sets out the requirements for the determination of the long-term management direction in an FMP. This consolidated term and condition includes changes to the current requirements for management objectives in T&Cs 22 and 23.

Recommended Term and Condition

MNR recommends that T&Cs 22, 23, 28, and parts of T&Cs 104 and 107 be deleted and replaced with the following:

11. The long-term management direction for the management unit shall be established in a Forest Management Plan in accordance with the Forest Management Planning Manual. In the development of long-term management direction:

- **(a) management objectives shall be identified in accordance with the requirements of the Forest Management Planning Manual;**
- **(b) analytical methodologies, models and tools, regarding forest regulation, social and economic analysis, wildlife habitat supply and landscape management, shall be used; and**
- **(c) the level of forest harvest shall be established for the ten-year period of the Forest Management Plan, using forest regulation methodologies that determine the Available Harvest Area for every forest unit on the management unit.**

3.1.7 Access Planning

Current Requirements

T&Cs 30 to 33, 46 to 53 and part of T&C 54 of the current EA Approval prescribe planning requirements for new primary, secondary and tertiary roads and river/lake drives in FMPs.

T&Cs 30 to 33 and 50 prescribe planning requirements for new primary roads for the 20-year period of an FMP. For each new primary road, a 1 kilometre corridor location and use management strategy must be determined, after consideration and environmental analysis of alternative corridors, including an assessment of the advantages and disadvantages to remote Native communities.

T&Cs 46 & 47 require the refinement of the 1 kilometre corridor to 500 metre for the portion of each primary road which will be constructed during the five-year term of an FMP.

T&Cs 46 to 50 prescribe planning requirements for primary and secondary roads for the five-year term of an FMP. For each new secondary road, a 500 metre corridor location and use management strategy must be determined, after consideration and environmental analysis of alternative corridors, including an assessment of the advantages and disadvantages to remote Native communities.

T&Cs 51 and 52 prescribe planning requirements for road crossings of Areas of Concern. For each road crossing of an Area of Concern, primarily water crossings, a 100 metre-wide location must be determined, after consideration and environmental analysis of alternative crossing locations. If the Area of Concern involves a water crossing, and the road is intended to be abandoned in the future, a preliminary decision must also be made on whether the water crossing structure is likely to require removal.

T&C 53 prescribes planning requirements for tertiary roads in Areas of Concern. Road locations do not need to be determined; rather, any necessary conditions on the location, construction or use management of roads, including removal of water crossing structures, must be determined.

Part of T&C 54 prescribes the requirement to map road corridors and locations.

T&C 30

(a) Each Timber Management Plan shall contain the selected corridor for each new primary road which will be required to provide access to and within areas eligible for operations (or the projected operating areas) for the 20-year period of the Timber Management Plan.

(b) The selected primary road corridors shall be clearly identified on the "eligibility maps" in the Timber Management Plan.

T&C 31

(a) For each new primary road, there shall be documentation of the reasons that a primary road is required and consideration of a reasonable range of practical alternative one-kilometre-wide corridors.

(b) In identifying a reasonable range of practical alternatives for evaluation, there shall be consideration and documentation of the following factors:

(i) the degree to which the physical conditions present in the area act as constraints or provide opportunities;
(ii) the degree to which non-timber values present in the area act as constraints or provide opportunities, including possibilities for development of other resources;
(iii) any significant engineering or safety factors; and
(iv) any other planning processes dealing with access in the area, including but not limited to planning of hydro transmission and pipeline corridors, access to hydro-electric generating sites, establishment of potential cottage and recreation areas.

1 ***T&C 32***

(a) For each corridor identified in accordance with Condition 31(b), there shall be an evaluation of the following parameters which shall be documented:
  (i) an assessment of the advantages and disadvantages of that alternative for timber management purposes, in providing access to and within areas eligible for harvest, renewal and tending operations for the 20-year period of the Plan;
  (ii) an assessment of the advantages and disadvantages of that alternative as they relate to potential effects on non-timber values;
  (iii) consideration of reasonable use management strategies; factors to be considered include public access provisions or restrictions, and maintenance provisions and, where appropriate, abandonment provisions; and
  (iv) an estimate of costs related to road construction and use management, including a projection of maintenance costs and, where appropriate, abandonment costs.
(b) The selection of a corridor from among the alternatives shall be based on a comparison of the evaluations of the alternatives. The reasons for the selection of the corridor and associated use management strategy shall be provided.

2 ***T&C 33***

Whenever a new river/lake drive is proposed, or an existing river/lake drive is proposed to be extended, for the purposes of access for timber management, the proposal shall be considered in the timber management planning process as a primary access option, and the planning requirements for primary access shall apply.

3 ***T&C 46***

(a) Each Timber Management Plan shall contain the location of each new primary and secondary road which is required during the five-year term of the Timber Management Plan.
(b) The selected locations of all primary and secondary roads for the five-year term shall be clearly identified on the "areas selected for operations maps" in the Timber Management Plan.

4 ***T&C 47***

For each primary road corridor selected in accordance with Condition 32, the corridor required for the five-year term of the Timber Management Plan shall be refined to a 500-metre wide road corridor. A specific location shall also be determined in each Area of Concern traversed by the corridor, in accordance with Conditions 51 and 52.

5 ***T&C 48***

(a) For each new secondary road, there shall be documentation of the reasons that a secondary road is required, and consideration of a reasonable range of practical alternative 500 metre-wide corridors.
(b) In identifying a reasonable range of practical alternatives for evaluation, the requirements of

Condition 31(b) shall apply.

1

T&C 49

(a) For each corridor identified in accordance with Condition 48(b), there shall be an evaluation of the following parameters which shall be documented:
- *(i) An assessment of the advantages and disadvantages of that alternative for timber management purposes, in providing access to and within areas selected for harvest, renewal and tending operations for the five-year term of the Plan;*
- *(ii) An assessment of the advantages and disadvantages of that alternative as they relate to potential effects on non-timber values;*
- *(iii) Consideration of reasonable use management strategies; factors to be considered include public access provisions or restrictions, and maintenance provisions and, where appropriate, abandonment provisions; and*
- *(iv) An estimate of costs related to road construction and use management, including a projection of maintenance costs and, where appropriate, abandonment costs.*

(b) The selection of a corridor from among the alternatives shall be based on a comparison of the evaluations of the alternatives. The reasons for the selection of the corridor and associated use management strategy shall be provided.

(c) Where the preferred use management strategy will require the restriction of public access on primary and secondary roads, the Timber Management Plan shall state why.

(d) For each secondary road corridor selected in accordance with Condition 49(b), a specific road location shall also be determined in each Area of Concern traversed by the corridor, in accordance with Condition 52.

2

T&C 50

In the planning of primary and secondary road corridors, where alternative corridors will create access to remote native communities not previously accessible by road, or will result in an increase in the accessibility of such communities, the analysis shall include an assessment of the advantages and disadvantages to the remote communities of the change in accessibility. The assessment shall include input from the specific communities.

3

T&C 51

(a) In each case where a primary or secondary road corridor selected in accordance with Conditions 32 or 49 traverses an Area of Concern, there shall be consideration of a reasonable range of practical alternative 100 metre-wide road locations in the Area of Concern.

(b) In identifying a reasonable range of practical alternatives for evaluation, the requirements of Condition 31(b) shall apply.

4

T&C 52

(a) For each road location identified in accordance with Condition 51(b) there shall be an evaluation of the following parameters, which shall be documented:
- *(i) Identification of the potential environmental effects on the value(s) present in the Area of Concern; and*
- *(ii) Identification of potential preventive and mitigative measures.*

(b) The selection of the road location from among the alternatives shall be based on a comparison of the evaluations of the alternatives. The reasons for the selection of the road location shall be provided.

(c) The selected road location in the Area of Concern shall be clearly identified on the "areas selected for operations maps" in the Timber Management Plan.

(d) Where it has been determined that the primary or secondary road which traverses the Area of Concern is likely to be abandoned, if there is a water crossing in the Area of Concern there shall be

a determination as to whether the water crossing is likely to require removal. That determination shall be based on biological, engineering, water quality and safety criteria. Relevant information to be considered at the time of issuance of construction approvals and work permits shall be provided in the Timber Management Plan.

(e) MNR shall form a committee of technical experts with the MOEE and the Industry in order to develop the biological, engineering, water quality and safety criteria referred to in Condition 52(d). These criteria shall be developed within two years of this approval.

T&C 53

Where tertiary roads may be constructed in areas associated with, or in proximity to, values identified on the values map, any necessary conditions on the locations, construction or use management (including water crossing removal) of those tertiary roads shall be determined. These conditions shall be documented in the Timber Management Plan and may also be portrayed on the maps of the areas selected for operations for the five-year term of the Plan. In appropriate circumstances, such conditions may involve marking or flagging of tertiary road locations prior to implementation of operations, and/or notification in advance to directly affected parties to provide an opportunity for verification of road locations in conformity with the conditions specified in the Timber Management Plan.

T&C 54

MNR shall ensure that the location of access road corridors and locations, landings, water crossings, reserves, buffers, and harvest blocks, shall be accurately mapped and clearly flagged. Such flagging shall occur before the commencement of timber management operations, and shall be routinely monitored by MNR during and after these operations to ensure compliance with the flagging and other prescriptions and operational restrictions.

Implementation Experience

Implementation experience with planning requirements for access planning is based on the development of forest management plans and the input and recommendations of the Forest Management Planning Improvement Project. This experience has identified access planning as a key area for improvement.

The current approach to defining road classes by period of use has not been as successful as had been anticipated. Although useful during planning, implementation experience has revealed that for many roads the forecasted period of use has changed once the road is constructed. In some cases forest operations have been extended and in many cases other users, such as recreationalists have continued to use the roads beyond their anticipated life span. The majority of these situations involve tertiary roads that have evolved to providing secondary road access, specifically for use beyond five years The increased volume of traffic and a longer period of use has resulted in issues with stakeholders and concerns regarding the proper level of planning for such features as watercrossings. Since these roads were planned as tertiary, matters such as usage and location were not fully explored during FMP development. Both stakeholders and practitioners have suggested improvements be made in this area.

The current requirement for the use of corridors for planning primary and secondary roads has proven to be beneficial. A 1 kilometre wide corridor for primary roads has provided the necessary flexibility to address other values and to allow for adjustments during actual construction. The 500 metre wide corridor for secondary roads has proven to be too limiting, and has not provided the needed flexibility to address conditions encountered during operations. This has resulted in numerous plan amendments requesting adjustment to the corridor location. The amendment process has ensured that the proper level of public consultation and planning has occurred in these situations, however this has been expensive and time consuming.

Implementation experience with alternative corridors for primary roads has proven to be successful in ensuring proper locations of principal access to a management unit. These roads have been constructed to high standards and involve significant costs for construction and maintenance and have provided long term permanent access.

The use of alternative corridors for secondary roads has raised concerns from practitioners and the public. In many cases alternatives have not been helpful in identifying preferred location but have added additional planning effort and cost and contributed to confusion for the public.

Identifying a preferred road location is guided primarily by the occurrence of natural resource features, values and operational considerations. The use of alternatives does not necessarily contribute to the identification of the preferred location, rather the proper analysis during planning does.

Many practitioners and publics have advocated a new approach, one that involves a focused planning effort that results in a single corridor being recommended that addresses values and concerns and provides a more meaningful opportunity for input.

Use management strategies for primary and secondary roads have been useful and important mechanism to address many values and interests. The lack of use management strategies for tertiary roads has been raised as an issue.

Practitioners have expressed concern regarding the current planning requirements for the identification and analysis of alternative 100 metre-wide locations for crossing Areas of Concern within primary and secondary road corridors. Experience has shown that there is limited capability to accurately identify viable crossings of Areas of Concern, in particular water crossings, during FMP preparation. Practitioners have indicated that in most cases subsequent fieldwork done in conjunction with implementation has led to the identification of adjustments to preferred locations and conditions requiring a plan amendment. Consideration of separate alternative locations has not proven to be significant, rather the most critical factor is focussing planning effort for a specific location with the knowledge of specific natural resource features, values and site conditions.

Practitioners have also identified that the current planning approach for tertiary roads which requires the identification of conditions or restrictions on location is not adequate alone to address all concerns and obtain the necessary approvals to begin construction. Changes regarding the application of the federal *Fisheries Act* (1985) also gives rise to the need for adjustments to tertiary road planning to focus on planning a water crossing location rather than simply restrictions. These changes also give rise to the need to adjust current approaches to Annual Work Schedule review and approval process regarding primary and secondary roads to provide sufficient time for the necessary considerations such as field inspections of water crossings to address the requirements of the federal *Fisheries Act*.

Experience has shown that there is a gap in the overall approach to access planning. The current terms and conditions do not address locational planning for roads that connect separate operating blocks and are used for less than five years.

Analysis of Implementation Experience

Primary and Secondary Corridors

MNR is recommending that location, purpose, and function are the most important factors for categorizing roads for planning purposes not the anticipated period of use that was previously used. MNR is recommending a revision to the classes and definitions of roads to improve planning.

The new classes are primary roads, branch roads (similar to secondary), and operational roads (similar to tertiary). This change will result in an increase in the number of branch roads, with associated planning requirements for corridor and use management strategies. There will be a corresponding reduction in the number of operational roads that will also require use management strategies. These changes will address the major part of the concern regarding inadequate road planning requirements for tertiary roads.

Current alternative corridor planning requirements for primary roads are retained. Planning requirements for branch roads are revised to focus efforts on the identification of a single corridor, with consideration of other values and consultation with interested and affected parties. Development of a preferred corridor with interested and affected persons would be a more efficient and meaningful approach to identifying corridor locations.

MNR is recommending a 1 kilometre-wide corridor for both primary and branch roads, to provide the necessary operational flexibility and to reduce the need for costly and time consuming plan amendments. Area of Concern planning within the corridor will continue to address natural resource features, land uses and values.

Use management strategies will be developed and applied to more roads as a result of the change in road classifications.

MNR proposes to consolidate the requirements of T&Cs 30 to 33 and 46 to 50 into a single new term and condition that sets out the requirements for the planning of new primary and branch road corridors in an FMP. This new consolidated term and condition includes changes to the current requirements in T&Cs 48 and 49 for corridors for secondary roads, now referred to as branch roads.

Recommended Term and Condition

MNR recommends that T&Cs 30 to 33 and 46 to 50 be deleted and replaced with the following:

12. The Forest Management Planning Manual shall describe corridor planning provisions for new primary roads (i.e., any road that provides the principal access for the management unit) and new branch roads (i.e., any road that branches off an existing or new primary or branch road, including those roads that provide access to separate areas of operations) including the following:

(a) In the preparation of the Forest Management Plan for the ten-year period, a 1 kilometre wide corridor and an associated use management strategy shall be identified for each new primary and branch road.

(b) For each new primary road, a 1 kilometre wide corridor shall be identified for a 20-year period, following the consideration and environmental analysis of a reasonable range of practical alternative corridors. Documentation of the consideration and environmental analysis of alternative road corridors, and the

rationale for the selected corridor and associated use management strategy for each new primary road, shall be provided in the supplementary documentation that accompanies the Forest Management Plan. The new primary roads that will be constructed during the ten-year period of the Forest Management Plan will be identified.

(c) For each new branch road, a 1 kilometre wide corridor shall be identified for a ten-year period, following the consideration of natural resource features, land uses and values, as identified on the values map for the management unit, and the results of consultation with affected and interested parties. Documentation of the rationale for the corridor and associated use management strategy for each new branch road shall be provided in the supplementary documentation that accompanies the Forest Management Plan.

Area of Concern Crossings - Primary and Secondary Roads

MNR is recommending revisions to planning requirements for Areas of Concern crossing locations to focus efforts on the identification of a single 100 meter wide location within the 1 kilometre wide corridor, with consideration of other values and consultation with interested and affected parties. By directing the effort for Area of Concern crossings to one location within the corridor, more attention can be directed to selecting the best available location and considering the environmental concerns for each water crossing.

MNR is recommending the review and approval of water crossing locations, as required under the federal *Fisheries Act*, be incorporated into the forest management planning process. To address this change an Annual Work Schedule requirement is proposed for water crossing locations for new primary and branch roads. This proposal requires the 100 metre wide locations previously identified in the FMP to be confirmed, or changed if required, in an Annual Work Schedule, at least one year prior to construction. This timely, site specific locational requirement will allow adequate time for field inspections and subsequent approvals, and will reduce the need for plan amendments.

MNR proposes to consolidate the requirements of T&Cs 51, 52 and part of T&C 54 into a single new term and condition that sets out the requirements for the planning of Area of Concern crossing locations within the 1 kilometre wide corridors for new primary and branch roads. This new consolidated term and condition includes changes to the current requirements of T&C 52 for the determination of Area of Concern crossing locations.

Recommended Term and Condition

MNR recommends that T&Cs 51, 52 and part of T&C 54 be deleted and replaced with the following:

13. The Forest Management Planning Manual shall describe planning provisions for Area of Concern crossings within primary and branch road corridors, including the following:

(a) In the planning of operations for each five-year operational term, a 100 metre wide location shall be identified for each crossing of an Area of Concern within the 1 kilometre wide corridor for each new primary and branch road to be constructed. The determination of each Area of Concern crossing location shall involve consideration of natural resource features, land uses and values, as identified on

the values map for the management unit, and the results of consultation with affected and interested parties.

(b) For each new primary and branch road water crossing to be constructed during the term of an Annual Work Schedule, the following information shall be provided in the Annual Work Schedule:
  (i) a map that shows the 100 metre wide location of the water crossing within the 1 kilometre wide corridor,
  (ii) the results of a review of the water crossing as required under the federal Fisheries Act,
  (iii) a description of the proposed crossing structure,
  (iv) any conditions on the construction of the crossing, and
  (v) a recommendation on the future removal of the crossing structure, if the road is planned to be abandoned.

(c) To allow for adequate review, the proposed location, structure and conditions on construction for each water crossing shall normally be identified in an Annual Work Schedule preceding the Annual Work Schedule for the year in which construction is scheduled.

(d) As part of the Annual Work Schedule approval, MNR shall approve each primary and branch road water crossing based on the information provided in accordance with part (b) of this term and condition.

Area of Concern Crossings - Tertiary Roads

As previously described for primary and branch road corridor planning, the new classes of primary, branch (similar to secondary), and operational (similar to tertiary) roads will result in an increase in the number of branch roads, with corridor and use management planning requirements, and a reduction in the number of operational roads.

For operational roads, the current planning requirement for the determination of conditions and restrictions on tertiary roads in Areas of Concern in an FMP will be retained. A new FMP requirement is recommended for the development of a use management strategy for all operational roads within each area of operations.
As in the case of water crossing locations for primary and branch roads, the review and approval of water crossing locations for operational roads, as required under the federal *Fisheries Act* must also be incorporated into the forest management planning process. A new Annual Work Schedule requirement is proposed for water crossing locations for operational roads. For each water crossing by an operational road, a maximum 100 metre location will be identified in an Annual Work Schedule, at least one year prior to construction. This timely, site specific locational requirement will allow adequate time for field inspections and subsequent approvals.

MNR proposes to consolidate the requirements of T&C 53 and part of T&C 54 into a single new term and condition. This new term and condition sets out the requirements for the planning of Area of Concern crossings for new operational roads. This consolidated, new term and condition includes changes to the current requirements of T&C 53 to add a requirement for a use management strategy for operational roads in each area of operations.

Recommended Term and Condition

MNR recommends that T&C 53 and part of T&C 54 be deleted and replaced with the following:

14. The Forest Management Planning Manual shall describe planning provisions for operational roads (i.e., roads within an area of operations) including the following:

(a) In the planning of operations for each five-year operational term, any necessary conditions and/or restrictions on the locations and/or construction of operational road crossings of Areas of Concern shall be identified and documented. In addition, for each area of operations, a use management strategy for all operational roads within the area of operations shall be documented.

(b) For each operational road water crossing to be constructed during the term of an Annual Work Schedule, the following information shall be provided in the Annual Work Schedule:

- **(i) a map that shows the 100 metre wide location of the water crossing,**
- **(ii) the results of a review of the water crossing, as required under the federal Fisheries Act,**
- **(iii) a description of the proposed crossing structure,**
- **(iv) any conditions on the construction of the crossing, and**
- **(v) a recommendation on the future removal of the crossing structure, if the road is planned to be abandoned.**

(c) To allow for adequate review, the proposed location, structure and conditions on construction for each water crossing shall normally be identified in an Annual Work Schedule preceding the Annual Work Schedule for the year in which construction is scheduled.

(d) As part of the Annual Work Schedule approval, MNR shall approve each operational road water crossing, based on the information provided in accordance with part (b) of this term and condition.

3.1.8 Planning of Harvest, Renewal and Maintenance Operations

Current Requirements

Identification of Areas of Operations and Forecasts of Level of Activity

T&Cs 29, 35, 36, 37 and 39 and parts of T&C 24, 27, 34, 38, 45 and 54 of the current EA Approval prescribe the requirements for the identification of the areas of operations for the five-year term of an FMP and the forecast level of activities.

T&C 29 prescribes the requirements for the identification of areas eligible and projected for harvest, renewal and tending operations for the 20-year period of an FMP, including the documentation of eligibility criteria and the production of maps of those eligible and projected areas.

T&C 35 prescribes the requirements for the selection of areas for harvest, renewal and tending operations for the five-year term of an FMP, including the use of the Maximum Allowable Depletion as the upper limit for the area selected for harvest operations, the documentation of selection criteria, and the production of maps of the areas selected for operations.

Parts of T&Cs 24, 27 and 45 prescribe requirements for the consideration of specific matters in the selection of areas of operations. Part of T&C 24 prescribes requirements for the consideration of 'visual resources' in the planning of forest operations. The introductory sentence of T&C 27 prescribes specific requirements for the selection of areas for clearcut harvest operations, requiring a range of sizes not to exceed 260 hectares; and T &C 27(b) allows for 'exceptions' to that maximum size of area, with a requirement for documentation of the reasons for those 'exceptions' in an FMP. Part of T&C 45 prescribes requirements for the consideration of the "maximum utilization of unmerchantable and unmarketable timber…for fuelwood" in the planning of harvest operations.

As part of the planning process to arrive at the areas selected for harvest operations, part of T&C 34 prescribes the requirement for a map of all areas which meet the selection criteria for harvest operations, with optional harvest areas ranked by preference.

Part of T&C 36 prescribes the requirement to identify a forecast of the level of timber harvest activity for the five-year term in an FMP and identify areas which are surplus to the estimated level of harvest as 'surplus area'; and part of T&C 54 prescribes the requirement to clearly map the locations of 'harvest blocks'.

T&C 37 prescribes the documentation requirements for the portion of the area planned for harvest which is related to insect pest management.

T&C 38(a) prescribes the requirements for the documentation of the planned level of renewal and tending operations, and the associated funding requirements, for the five-year term.

T&C 39 prescribes the requirement to identify a contingency area on the maps of areas selected for operations, to serve as replacement area for harvest during the five-year term if some of the original areas selected for harvest become unavailable.

Part of T&C 45 prescribes requirements for the consideration of the disposition of "unmerchantable and unmarketable timber" as fuelwood in the planning of harvest operations.

Planning of Operations - Silvicultural Ground Rules

T&Cs 25, 26, 40(a) and part of T&C 20 and the associated Appendix 7 of the current EA Approval prescribe the requirements for the preparation of Silvicultural Ground Rules which serve as the operational prescriptions for most of the areas of operations for the five-year term of an FMP.

T&C 25 prescribes the requirements for the development of Silvicultural Ground Rules in an FMP, using the silvicultural guides identified in T&C 20 and the associated Appendix 7 or their successors.

T&C 26(b) provides for the Silvicultural Ground Rules to include treatments which are 'exceptions' to the recommendations in the appropriate silvicultural guide, with a requirement for documentation in the FMP of the reasons for any such 'exceptions'. T&C 26(a) prescribes the requirements for the documentation of the Silvicultural Ground Rules in a table in an FMP, including the requirement to specify the 'preferred silvicultural treatment package' and 'alternative silvicultural treatment packages' for each forest unit-site type combination.

T&C 40(a) prescribes the requirement to link the Silvicultural Ground Rules table to the maps of the areas selected for operations for the five-year term, by identifying the appropriate site types described in the Silvicultural Ground Rules on those maps.

Planning of Operations - Silvicultural Treatments of Special Public Interest

T&C 40(b) of the current EA Approval prescribes the requirement to identify silvicultural treatments of special public interest on the maps of areas selected for operations for the five-year term of an FMP. Those treatments include candidate prescribed burns, areas proposed for the aerial application of herbicides and insecticides, and areas for fuelwood.

Planning of Operations - Area of Concern Prescriptions

T&Cs 41 to 44, parts of T&Cs 17 and 20 and the associated Appendices 5 and 7, and parts of T&Cs 24, 54 and 103(e) of the current EA Approval prescribe the requirements for the planning of operations in Areas of Concern within the areas of operations for the five-year term of an FMP.

T&Cs 41 to 44 prescribe the requirements for the planning of forest operations for Areas of Concern - specific areas within the areas selected for operations which contain natural resource features, land uses and values that are potentially negatively affected by forest management operations. The locations of those natural resource features, land uses and values are identified on 'values maps', as required by T&C 17 and Appendix 5. The values maps must include all sites which contain old growth red and white pine forest communities, as required by part of T&C 103(e).

T&C 20 prescribes the requirement for the use of the appropriate implementation manuals identified in Appendix 7 in the planning of prescriptions for Areas of Concern.

T&Cs 42 (a) and (b) prescribe the planning and supplementary documentation requirements for Area of Concern prescriptions, which vary depending upon whether there is specific direction or recommendations in an implementation manual.

T&C 43 prescribes the requirements for the consideration and environmental analysis of alternative prescriptions whenever a unique prescription for an Area of Concern must be created in the absence of specific direction or recommendations in an implementation manual.

T&C 42(c) provides for the creation of Area of Concern prescriptions which are 'exceptions' to the specific direction or recommendations in the appropriate implementation manual, in accordance with the requirements of T&C 43.

T&C 41 prescribes the requirements for the documentation of Area of Concern prescriptions, and their portrayal on the maps of areas selected for operations for the five-year term, in an FMP.

T&C 44 prescribes requirements to document in an FMP any objections to Area of Concern prescriptions which have been developed in consultation with directly affected parties.

Part of T&C 24 prescribes requirements for the consideration of 'visual resources' in the planning of forest operations, including requirements to document in an FMP the rationale for any prescription which address visual concerns, and objections to any of those prescriptions.

Part of T&C 54 prescribes the requirement to clearly map 'reserve' prescriptions for Areas of Concern on the maps of the areas selected for operations in an FMP.

Protection of Identified Native Values

T&C 57 and Appendix 10 prescribe requirements for the production of a Report on Protection of Identified Native Values.

Improving Silvicultural Planning

T&C 38(b) and (c) prescribe the requirements for an estimate of the area of planned harvest which is expected to regenerate successfully and a discussion of any significant differences between the planned level of renewal and tending operations and the level necessary to achieve management objectives.

Monitoring Program

T&C 55 of the current EA Approval prescribes the requirement for an FMP to include a program for monitoring the implementation of operations during the five-year term of an FMP. The contents of the monitoring program include the planned area inspection program, specific provisions for monitoring the effectiveness of 'exceptions' treatments in the Silvicultural Ground Rules and 'exceptions' prescriptions for Areas of Concern, and the program for free-to grow assessments.

T&C 17

(a) For each Timber Management Plan, MNR shall produce a values map (or series of maps) for the forest management unit. The values map is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in timber management planning, and about which further inventory information is available. The values map is intended to be used primarily for planning purposes, and will also be used to display available information, and to solicit information about natural resource features, land uses and values which may not have been previously identified. The types of information normally portrayed on the values map (or maps) are listed in Appendix 5, part B.

(b) The values map (or maps) will be continuously updated during the preparation and implementation of the Timber Management Plan, as information is assembled.

(c) The values map (or maps) will be available on request from the appropriate MNR district office. The detailed background information for the forest management unit, which is summarized on the

values map (or maps), will be maintained at the appropriate district office and be made available on request to any person, except in those cases where publication of the information may be detrimental to the conservation of particular values.

(d) The values map (or maps) shall be prepared at a suitable scale to allow for appropriate resolution of information and for ease of reproduction, and all values maps will use standard symbols for commonly mapped items.

T&C 20

(a) MNR's approved implementation manuals, as updated in accordance with Condition 93, shall be used in the planning and implementation of timber management activities. These implementation manuals include provincial guidelines and construction/operational manuals, the use of which is mandatory in timber management. The implementation manuals also include resource/environmental manuals, which are used in the development of timber management strategies and prescriptions for the specific values addressed in those manuals when those values are at risk or are featured for management on the forest management unit.

(b) Implementation manuals are listed in Appendix 7.

Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:

T&C 24

Timber Management Plans shall contain a section on Visual Resource Management where the Plan author will report the status of complaints about visual impacts and the rationale for the prescription made to address the complaint. Disputes over visual resources that remain unresolved shall be summarized in the Annual Report for the Forest Management Unit pursuant to Condition 79 and Appendix 18, section 1(n), and in the five-year State of the Forest Report pursuant to Condition 84 and Appendix 22, section 1(l).

T&C 25

(a) Each Timber Management Plan shall contain Silvicultural Ground Rules developed for the forest management unit by a Registered Professional Forester.

(b) Pending completion of the revision of MNR's silvicultural guides (described in Condition 94(a)), the site types contained in the Silvicultural Ground Rules for the forest management unit shall be developed using the current silvicultural guides, and the relevant Forest Ecosystem Classification System, and the best available site information.

(c) Upon completion of the revision of MNR's silvicultural guides (described in Condition 94(a)), the general standard site types provided in MNR's silvicultural guides shall be used in the development of the Silvicultural Ground Rules. The Silvicultural Ground Rules which are developed for each forest management unit will be cross-referenced to the general standard site types provided in the silvicultural guides.Silvicultural Ground Rules:Silvicultural Ground Rules:Silvicultural Ground Rules:Silvicultural Ground Rules:Silvicultural Ground Rules:Silvicultural Ground Rules:Silvicultural Ground Rules:

T&C 26

(a) The table identifying Silvicultural Ground Rules shall include a description, by site type, of:
(i) the preferred silvicultural treatment package including silvicultural system, logging method, site preparation, regeneration and tending treatments and acceptable alternative silvicultural treatment packages; and
(ii) regeneration stocking standards.
(b) Where a silvicultural treatment included in the Silvicultural Ground Rules is not in accordance with recommendations included in the appropriate silvicultural guide, the treatment shall be recorded in the Timber Management Plan as an "exception." The reasons for that treatment shall be provided.

1

T&C 27

(a) MNR shall implement a restriction on clearcut harvesting requiring a range of sizes of clearcuts not to exceed 260 hectares. MNR shall also develop standards for configuration and contiguity of clearcuts which will ensure that the purpose of this restriction is not frustrated.
(b) These restrictions and standards shall be incorporated into the Environmental Guidelines for Timber Management Activities specified in Condition 94(b).Silvicultural Ground Rules shall be prepared with the objective of ensuring that clearcuts are planned to a range of sizes and not consistently approach or meet the permitted maximum. Where for sound biological or silvicultural reasons individual or contiguous clearcuts exceed 260 hectares, they shall be recorded in the Plan as an exception to this condition, with reasons provided.
(c) MNR shall inventory and monitor clearcuts and exceptions to the maximum size restriction as well as configuration and contiguity. The results shall be in the Annual Report for the Forest Management Unit, in the Annual Report to the Legislature, in the five-year State of the Forest Report and in the review for the Minister of Environment and Energy pursuant to Condition 114 (a)(v).

2

T&C 29

(a) Each Timber Management Plan shall contain criteria for the identification of areas eligible for harvest, renewal and tending operations for the 20-year period of the Plan. Those areas in the forest management unit which meet the eligibility criteria shall be portrayed on "eligibility maps" in the Timber Management Plan, and an explanation of how the application of the eligibility criteria resulted in the areas eligible for operations shall be provided.
(b) Where the area of the forest management unit meeting eligibility criteria is considerably in excess of the anticipated requirements for the 20-year period of the Plan, a "projected operating area" where those operations are most likely to take place during the 20-year period may be identified. Where the option of a "projected operating area" is used in the preparation of a Timber Management Plan, the rationale for the selection of the area shall be provided.

3

T&C 34

At the First Information Centre MNR shall provide a map depicting those areas meeting the selection criteria for harvest during the five-year term of the Plan. This map shall indicate preference by rank of those areas proposed for harvest and the reasons for the ranking accorded. This map shall be in summary form for the public to take home.

4

T&C 35

Each Timber Management Plan shall contain criteria for the selection of areas for harvest, renewal and tending operations for the five-year term of the Plan. Those areas in the forest management unit within the areas eligible for operations which meet the selection criteria shall be portrayed on "areas selected for operations maps" in the Timber Management Plan. For harvest operations, areas will be selected up to the level of the Maximum Allowable Depletion. An explanation of how the application of the selection criteria resulted in the areas selected for harvest, renewal and tending operations shall be provided.

1

T&C 36

Each Timber Management Plan shall contain a forecast of the level of timber harvest activity expected to be carried out during the five-year term of the Plan. This estimate shall be based on past and projected industrial wood requirements. The area selected for harvest which is surplus to the estimated level of harvest shall be identified on the "areas selected for operations maps" as "surplus area.

2

T&C 37

The Plan author shall describe the size of the area planned for harvest operations and the size of the area planned for harvest required for the reason of insect pest management including accelerated harvest operations, redirected harvest operations and salvage operations. The Plan author shall also describe, by species, the extent to which these harvest activities will mitigate or prevent damage to timber and the impact these harvest activities will have on the extent of spray operations.

3

T&C 38

(a) Each Timber Management Plan shall contain a forecast of the level of activity for tending and renewal operations (e.g. site preparation, planting, seeding, natural regeneration and tree improvement support) planned to be carried out during the five-year term of the Plan, and an estimate of the amount of spending required to achieve the regeneration goals.

(b) Each Timber Management Plan shall contain an estimate of the area of planned harvest which is expected to regenerate to commercial species within a prescribed time period (i.e. years to Free to Grow) as specified in the Maximum Allowable Depletion calculation, whether by artificial or natural regeneration methods. A discussion shall also be provided concerning the relationship between the area of planned harvest and the area expected to regenerate to commercial species within that prescribed time period.

(c) Each Timber Management Plan shall contain a discussion concerning any significant differences between the planned level of renewal and tending activity and the level necessary to achieve the timber management objectives for the forest management unit, and the potential implications of those differences for long-term wood supply.

4

T&C 39

In addition to the areas selected for harvest, renewal and tending operations for the five-year term, each Timber Management Plan shall identify a contingency area. This area will be available for operations in the event that circumstances arise causing the areas selected for operations to be no longer available. The contingency area must meet the criteria for the selection of areas for harvest, renewal and tending operations, and therefore shall fall within the previously identified eligible areas. The contingency area shall be identified separately on the "areas selected for operations maps."

5

T&C 40

(a) The locations where the various site types described in the Silvicultural Ground Rules are likely to be encountered within the areas of operations for the five-year term of the Timber Management Plan shall be recorded on the "areas selected for operations maps." This information will represent the best estimate of the site conditions that are likely to be encountered, based on available information at the time of Plan preparation, and will not limit the selection of any other approved alternative silvicultural treatments (contained in the Silvicultural Ground Rules) in the event that the actual site conditions encountered are found to be different at the time of implementation of operations.

(b) The locations where the following silvicultural treatments of special public interest are likely to occur during the five-year term of the Timber Management Plan shall be portrayed on the "areas

selected for operations maps":

- *(i) candidate prescribed burns,*
- *(ii) aerial application of herbicides,*
- *(iii) areas eligible for insect pest management and areas proposed for spray projects, and*
- *(iv) locations where there is a likelihood of merchantable and unmerchantable timber being left on site after harvest, the reasons for this and plans for its disposition.*

This information will represent the best estimate of proposed operations at the time of Plan preparation, and will not limit the selection of any other approved alternative silvicultural treatments (contained in the Silvicultural Ground Rules) at the time of implementation of operations

T&C 41

(a) Each Timber Management Plan shall contain specific prescriptions for individual Areas of Concern, or groups of Areas of Concern having common values, which may be affected by timber management activities within the areas selected for operations during the five-year term of the Timber Management Plan.

(b) The selected prescription for each Area of Concern, or group of Areas of Concern having common values, shall be listed in the Timber Management Plan and, where practical, shall be portrayed on the "areas selected for operations maps" in the Timber Management Plan.

T&C 42

For each Area of Concern or group of Areas of Concern having common values, there shall be consideration of a reasonable range of practical alternative prescriptions. Alternative prescriptions may include reserves, modified operations or normal operations, individually or in combination. In identifying a reasonable range of practical alternatives for evaluation, the following principles shall apply:

(a) (i) where an implementation manual provides specific direction as to the appropriate prescription to be used in specific circumstances, that prescription may be selected without additional consideration of alternative prescriptions;
(ii) in all such cases, documentation of the specific prescription and the identification of the appropriate section of the implementation manual shall be provided;

(b) (i) where an implementation manual provides recommendations for prescriptions when particular conditions are encountered, and both the local conditions and the selected prescription are in accordance with the implementation manual, additional consideration of alternative prescriptions is not required;
(ii) in all such cases, the specific conditions encountered, the reasons for determining that the prescription is reasonable in the particular local circumstances, the specific prescription and the identification of the appropriate section of the implementation manual shall be provided;

(c) where it is determined that the specific direction or recommendations referred to in Conditions 42(a) and 42(b) may not be appropriate to the local circumstances: additional alternative prescriptions shall be identified; the requirements of Condition 43 shall apply; and the selected prescription (where it differs from the specific direction or recommendations) shall be recorded in the Timber Management Plan as an "exception."

T&C 43

(a) Where alternative prescriptions are identified in accordance with Condition 42, there shall be an evaluation of the following parameters for each alternative which shall be documented:

- *(i) Identification of the potential environmental effects of specific timber management activities on the value(s) present in the Area of Concern; and*
- *(ii) an assessment of the advantages and disadvantages of that alternative prescription in preventing, minimizing or mitigating the potential effects on the value(s) present in the Area of Concern.*

(b) The selection of a prescription from among the alternatives shall be based on a comparison of the evaluations of the alternative prescriptions. The reasons for the selection of the prescription shall be provided.

T&C 44

Where an implementation manual requires consultation with directly affected parties in the development of specific prescriptions, the Timber Management Plan shall record instances where those parties do not concur with the selected prescription, with the reasons for their non-concurrence where available.

T&C 45

Timber Management Plans shall provide for maximum utilization of unmerchantable and unmarketable timber including timber left on the ground in piles or still standing following harvest operations, for fuel wood. MNR shall provide advertised notice of locations where fuel wood can be found.

T&C 54

MNR shall ensure that the location of access road corridors and locations, landings, water crossings, reserves, buffers, and harvest blocks, shall be accurately mapped and clearly flagged. Such flagging shall occur before the commencement of timber management operations, and shall be routinely monitored by MNR during and after these operations to ensure compliance with the flagging and other prescriptions and operational restrictions.

T&C 55

(a) Each Timber Management Plan shall contain a discussion of the following monitoring provisions:
  - *(i) a general description of the "area inspection program" (see Condition 78) for that forest management unit, and specific provisions for monitoring operations in individual Areas of Concern or groups of Areas of Concern having common values;*
  - *(ii) specific provisions for monitoring the effectiveness of any silvicultural treatments which are "exceptions" to the recommendations in the silvicultural guides, as described in Condition 26(b);*
  - *(iii) specific provisions for monitoring the effectiveness of any prescriptions which are "exceptions" to the recommendations in any other implementation manual, as described in Condition 42(c); and*
  - *(iv) the program for carrying out Free-to-Grow Assessments for both naturally and artificially regenerated areas on that forest management unit.*

(b) The monitoring provisions shall address the methods to be used, the timeframe for monitoring, and reporting requirements.

T&C 57

In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, during the development of the Timber Management Plan the timber management planning team shall produce a Report on Protection of Identified Native Values. The contents of the Report are listed in Appendix 10.

T&C 103 (e)

(b) For the purpose of this approval, and until a provincially coordinated general policy setting out an environmentally sound conservation strategy is provided which,

(iii) Defines old growth white and red pine or deems what is old growth white and red pine, and

(iv) Provides a specific process to identify and plan for the management and conservation of old growth white and red pine,

Timber Management Plans must record as values pursuant to Appendix 5, part B, section 1(a)(iv) all sites found to contain communities of old growth white and red pine. Where candidate sites are omitted from the values list and values maps, the Plan must record the reasons the site does not constitute old growth white or red pine.

1

Appendix 5: Background Information:

B: Values Map Content:

1. A "values map" is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in timber management planning, and about which further inventory information is available. The types of information portrayed on the values map (or maps) will normally include, but are not limited to, the following, where such values have been identified by MNR, the forest industry or by any other person and are verifiable:

(a) Natural Resource Features

(i) Fisheries

- *major fish communities by lake/stream*
- *bait fish lakes*
- *spawning areas*
- *nursery areas*
- *migration areas*
- *headwater lakes*
- *food supply areas*

(ii) Wildlife

- *moose concentration areas (early & late winter)*
- *aquatic feeding areas*
- *mineral licks*
- *calving sites*
- *deer wintering areas (yards)*
- *raptor (i.e. eagle/osprey) nests*
- *heronries*
- *waterfowl nesting areas*
- *important habitats of rare, threatened, and endangered species**
- *caribou migration routes*
- *caribou calving areas*
- *caribou wintering areas*

(viii) Areas of Natural and Scientific Interest, including Candidate Areas of Natural and Scientific Interest (ANSIs)

(ix) Significant communities of flora/fauna including candidate old growth red and white pine forest communities

(x) Classified wetlands (S. Ontario)

(xi) Provincially significant wetlands (N. Ontario)

(xii) Forests

- *tree improvement areas*
- *seed orchards*
- *seed collection areas*
- *genetic test areas*
- *research plots (e.g. provenance test areas)*

(b) Forest Resource Uses/Values

(i) Tourism Establishments

- *main base lodges*
- *outpost camps*
- *commercial boat caches*
- *potential tourism areas*

(ii) Cottaging/Residential Sites or Areas

- *Existing development*
- *Proposed development (from lakeshore management plans)*
- *Remote cottage sites*

(iii) Mineral/Aggregate/Quarry Development

- *pit or quarry permits/licenses*
- *active mining claims*

(iv) Commercial Fur

- *Registered trapline areas*
- *Trapper cabins*

(v) Wild Rice Production Areas

(vi) Crown Land Recreation

- *trapper cabins access points*
- *canoe routes*
- *portage trails*
- *hiking/nature trails*
- *snowmobile trails*
- *cross-country ski trails*
- *approved boat caches*
- *land use permit hunt camps*

(c) Existing and Planned Infrastructure Features such as:

- *roads and railways*
- *utilities (pipelines, hydro lines)*
- *waste and sewage disposal sites*
- *potable water supply sources, including sites on lakes, rivers and streams identified by any person as being used for water supplies*
- *communications towers*
- *airports/airstrips*
- *logging camps*
- *mills*

*(d) Cultural Heritage Sites such as:**

- *cultural landscapes*
- *structural remains*
- *archaeological remains*
- *traditional use sites*

(e) Other Special Land Uses of Local Significance as identified by any person, such as:

- *areas of significance to local communities such as areas used for traditional or recreational activities;*
- *boundaries of registered trapline areas;*
- *Reserves and other native communities;*
- *areas which have been identified as being required as reserve lands or for economic or capital development projects;*
- *areas used for fuelwood or building materials;*
- *sites of local archaeological, historical, religious and cultural heritage significance, including native graveyards, spirit sites and burial sites.**
- *medicinal plants*

(f) Exclusions from the Land Base of the Forest Management Unit including:

- *patented lands*
- *Federal lands (e.g. Indian Reserves, Department of National Defence Bases, National*

Parks)

- provincial parks and approved provincial park candidates
- Crown land leases (i.e. land use permits, licenses of occupation)
- Cemeteries/burial grounds, including native cemeteries and burial grounds*
- Areas of Natural and Scientific Interest which have been designated as exclusions from the forest management unit

*** Publicizing The Location Of Certain Values May Be Detrimental To Conservation In Which Case Information Would Not Normally Be Shown On The Values Map.**

Appendix 7: Implementation Manuals For Timber Management

Implementation manuals include the following provincial guidelines, construction/operational manuals and resource/environmental manuals:

(a) Provincial guidelines:
  (i) A Silvicultural Guide to the Jack Pine Working Group in Ontario, 1986
  (ii) A Silvicultural Guide to the Spruce Working Group, 1988
  (iii) A Silvicultural Guide to the Poplar Working Group, 1989
  (iv) A Silvicultural Guide for the Tolerant Hardwoods Working Group in Ontario, 1990
  (v) A Silvicultural Guide for the White Pine and Red Pine Working Groups in Ontario, 1990
  (vi) A Silvicultural Guide for the Mixed Wood Working Group (pursuant to Condition 94(d))
  (vii) Timber Management Guidelines for the Protection of Tourism Values, 1986
  (viii) Timber Management Guidelines for the Provision of Moose Habitat, 1988
  (ix) Timber Management Guidelines for the Protection of Fish Habitat, 1988
  (x) Timber Management Guidelines for the Provision of White-tailed Deer Habitat (in preparation)
  (xi) Timber Management Guidelines for the Protection of Cultural Heritage Resources, 1991
  (xii) Timber Management Guidelines for the Provision of Pine Marten Habitat (pursuant to Condition 94(c))
  (xiii) Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat (pursuant to Condition 94(c))
  (xiv) Environmental Guidelines for Timber Management Activities (pursuant to Condition 94(b))
(b) Construction/operational manuals:
  (i) Aerial Spraying for Forest Management - an Operational Manual, 1981 (Note: applies to MNR only)
  (ii) Resource Access Roads Policy and Implementation Strategies and Guidelines, 1985
  (iii) Prescribed Burn Planning Manual, 1988
  (iv) Environmental Guidelines for Access Roads and Water Crossings, 1988
  (v) Code of Practice for Timber Management Operations in Riparian Areas, 1991.
(c) Resource/environmental manuals:
  (i) Management Guidelines and Recommendations for Osprey in Ontario, June 1983
  (ii) Habitat Management for Ontario's Forest Nesting Accipiters, Buteos, and Eagles, March 1984
  (iii) Habitat Management Guidelines for Cavity Nesting Birds in Ontario, March 1984
  (iv) Management Guidelines for the Protection of Heronries in Ontario, 1984
  (v) Habitat Management Guidelines for Warblers of Ontario's Northern Coniferous Forests, Mixed Forests or Southern Hardwood Forests, March 1984
  (vi) Habitat Management Guidelines for Bats of Ontario, August 1984
  (vii) Habitat Management Guidelines for Birds of Ontario Wetlands including marshes, Swamps, and Fens or Bogs of various types (excluding waterfowl), March 1985
  (viii) Bald Eagle Habitat Management Guidelines, June 1987
  (ix) Golden Eagle Habitat Management Guidelines, November 1987
  (x) Peregrine Falcon Habitat Management Guidelines, December 1987

(xi) Guidelines for Providing Furbearer Habitat in Timber Management (in preparation)
(xii) Habitat Management Guidelines for Woodland Caribou (in preparation)
(xiii) Habitat Management Guidelines for Waterfowl in Ontario (in preparation)
(xiv) Guide for MNR Field Personnel, 1991

Appendix 10: Report On Protection Of Identified Native Values

Preliminary Report on Protection of Identified Native Values:

1. In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, during the development of the Timber Management Plan, the planning team shall produce a Preliminary Report on Protection of Identified Native Values. The Report shall consist of the following components:
(a) a mapped summary of the proposed areas of operations and alternative road corridors;
(b) the most current updated versions of the values map and the native values map;
(c) an evaluation of alternative prescriptions for specific Areas of Concern associated with the native values identified in the Native Background Information Report affected by the anticipated operations for the five-year term;
(d) an evaluation of the alternative road corridors of potential interest to the native community; and
(e) a comment sheet and the name of a native community contact person and an MNR contact person.

Final Report on Protection of Identified Native Values:

2. In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, upon completion of the draft Timber Management Plan, the planning team shall produce a Final Report on Protection of Identified Native Values. The Report shall consist of the following components:
(a) the summary of the draft Timber Management Plan;
(b) the most current updated versions of the values map and the native values map;
(c) in order to communicate the results of previous consultation, the selected prescriptions for the specific Areas of Concern associated with the native values identified in the Preliminary Report on Protection of Identified Native Values; the reasons for the selected prescriptions; and any associated MNR preliminary required alterations; and
(d) the selected road locations of potential interest to the native community, reasons for the selected locations and use management strategies; and any associated MNR preliminary required alterations.

3. Copies of both the Preliminary and Final Report on Protection of Identified Native Values will be provided to the Ontario Native Affairs Secretariat.

Implementation Experience

Identification of Areas of Operations and Forecasts of Level of Activity

Under the current planning system, areas eligible for harvest during the 20-year period have been identified. Describing eligible areas for a twenty-year period had resulted in a large amount of area being shown as eligible, with significantly less area actually being scheduled for harvest. Practitioners, plan reviewers and the general public have identified that this approach is confusing and that there is a need to have a more meaningful approach to identification of eligible areas.

The identification of preferred and optional harvest areas was meaningful and beneficial to the public for viewing at information centres. Plan authors have indicated that there was some degree of difficulty in ranking optional harvest areas in order of preference.

Where surplus harvest area was identified it was documented in forest management plans. The identification of surplus harvest areas should continue to be required, as these areas may be important to address regional wood supply strategies.

Forest management plans have provided for a range of clearcut sizes as required by T&C 27. The subject of clearcut harvesting has been discussed in Clearcut Harvesting - Planning and Reporting -T&C 27 (b)&(c) that is included in Section 5.0 Progress Reports. That progress report describes the direction for planning and reporting on clearcut harvesting that has been used by practitioners. The progress report also describes the results of a review of forest management plans approved from 1997 to 2001 and found that FMPs documented when and where clearcuts were planned to exceed 260 hectares. The primary rationale documented in FMPs for clearcuts greater than 260 hectares was related to meeting the *Crown Forest Sustainability Act* requirement to emulate natural disturbances and landscape patterns. The Forest Management Guide for Natural Disturbance Pattern Emulation (MNR 2001b), which was approved in 2001, provides standards for harvest layout, configuration and contiguity for future planning and reporting purposes.

The current requirement to have from three months to one year of contingency area identified in a FMP was found to be inadequate to provide for the necessary operational flexibility to address changing environmental, social and economic conditions. Practitioners have requested an increase in the maximum amount of contingency area in a forest management plan.

Silvicultural Ground Rules

Silvicultural ground rules have been produced in accordance with forest management planning requirements. The current requirements for the preparation of silvicultural ground rules resulted in meaningful information. This approach however, has resulted in a table that can be up to 400 pages per plan, and has become unwieldy. This is largely a result of current term and condition requirements to display preferred silvicultural treatment package and all other alternative treatment packages, ranked in order of preference. Practitioners, plan reviewers, and local citizens committees have expressed the need to produce a simplified, easy to use format for this table.

At the time of the original EA Approval, the phrase general standard site type was used, however, that terminology has since evolved in reference to forest ecosystem classification. The term ecosite has been chosen as the equivalent reference and is used in the silvicultural ground rules contained in forest management plans. The requirement to connect the silvicultural ground rules to the maps of the areas selected for operations has been met by mapping ecosites. The development of tools that easily provide the linkage between the forest resource inventory and ecosites have assisted planning teams with this requirement. To reflect the current terminology and direction in forest ecosystem classification systems it is necessary to change the references from site-types to ecosites.

In some forest management plans, treatments that are exceptions to silvicultural guides are proposed. Exceptions monitoring is an useful and important provision that allows for innovation and adaptive management approaches.

Silvicultural Treatments of Special Public Interest

Forest management plans have identified the silvicultural treatments of special public interest (i.e. prescribed burns, aerial application of herbicides, insect pest management program, and the availability of fuelwood) on the areas selected for operations maps. Although it is difficult to forecast some of these treatments at the time of plan preparation, these treatments continue to be of interest to the public and should continue to be addressed in forest management plans and further refined during project planning in conjunction with annual work schedules.

Area of Concern Prescriptions

Area of concern prescriptions were developed and documented in accordance with the forest management planning requirements. In some cases the current requirements have resulted in unnecessary duplication of direction contained in implementation manuals being recorded in supplementary documentation of forest management plans. Concerns have been expressed by practitioners regarding the amount of documentation required for areas of concern with a common value with the same prescription. Practitioners expressed the need to provide clarity in documentation requirements to be more efficient and effective.

Practitioners have also experienced an increase in the number of situations where recommendations are being brought into the forest management planning process from other planning exercises. They have expressed the need to recognize proposed prescriptions from those other planning exercises when the subject matter is directly related to forest management. In addressing these proposed prescriptions in forest management planning, consideration has been given to the level of planning effort already undertaken, alternative prescriptions examined and the nature of available supporting information. Practitioners have also recognized the need for an opportunity for full public review and comment on these proposed prescriptions and their finalization as an integral part of FMP review and approval.

The progress report for T&C 24 Visual Resources is included in Section 5.0, Progress Reports. This progress report describes how the forest management planning process addresses complaints about visual resources. A review of individual FMPs found that as part of the planning process, planning teams addressed visual concerns through the development of area of concern prescriptions, often associated with other values. Visual concerns are also addressed, and well documented, throughout a FMP.

Report on the Protection of Identified Aboriginal Values

Currently The Report on Protection of Identified Aboriginal Values is only required to be produced where Aboriginal communities participate in the optional Forest Management Native Consultation Program. Implementation experiences have indicated that where the report has been prepared with involvement of Aboriginal communities their has been significant benefit realized. Some Aboriginal communities are reluctant to share values information with the public and have requested the information have a limited distribution.

Improving Silvicultural Planning

The current requirements of the EA Approval, T&C 21 and T&C 38, examine the result of previous renewal and tending operations in the FMP as part of the Report of Past Forest Operations. Forest management plans have considered future planned levels of renewal and tending operations and associated expenditures in the development of objectives and strategies. Plans have included discussions on the differences between planned levels of renewal and tending activity and those necessary to achieve plan objectives.

Observations have been made that the linkages between conclusions and recommendations of the Report of Past Forest Operations with respect to previous renewal efforts, forecasting of silvicultural activities and the identification of necessary funding levels should be strengthened.

Monitoring Program

The development of a monitoring program in a FMP is a useful requirement and has been integrated with the forest operations compliance program.

The opportunity to develop prescriptions that are exceptions to direction and recommendations in implementation manuals has proven to be a useful approach. Numerous forest management plans have included provisions for monitoring of exceptions to support innovation and allow practitioners to adapt a prescription to address specific circumstances encountered.

Initially, exceptions monitoring was challenging due to a lack of clarity as to what was required and who needed to be involved; however, more recent experience in the development of monitoring programs in conjunction with science staff has been successful.

Analysis of Implementation Experience

Identification of Areas of Operations and Forecasts of Level of Activity

Areas considered for operations during an FMP process and those areas selected for operations in the final plan have been of particular interest to the public. For the most part the current requirements have worked well but some changes are required.

Based on implementation experience, a more meaningful approach is required to identify areas where operations are most likely to occur rather than an identification of a much broader area that is simply eligible for operations. MNR is recommending, a change so that only areas that can reasonably be operated in a ten-year period will be identified. This will focus both planning effort and public consultation to a more refined geographic area.

MNR is recommending improvements to the process for identifying preferred and optional harvest areas for a ten-year period. In addition, the preferred harvest area will be sub-divided for two five-year operational terms. These improvements will also result in more meaningful products for public review.

Providing for a range of clearcut sizes is consistent with the original EA Approval and current direction to emulate natural disturbance patterns and will be retained as a forest management planning requirement. The Forest Management Guide for Natural Disturbance Pattern Emulation and the FMP Manual provides direction for defining a clearcut and emulating natural disturbance patterns. That direction also includes the requirement to provide a rationale for clearcuts greater than 260 hectares in forest management plans.

As part of the approach for a ten-year plan, MNR is recommending an increase in the amount of the contingency area to a minimum of six months and a maximum of two years, to provide for necessary operational flexibility.

MNR proposes to consolidate the requirements of T&Cs 29, 35, 36, 37 and 39 and parts of T&Cs 24, 27, 34, 38, 45 and 54 into a single new term and condition which sets out the planning and documentation requirements for the identification of areas of operations for the ten-year period of an FMP, and the confirmation or modification of the areas of operations for the second five-year operational term of an FMP.

Recommended Term and Condition

MNR recommends that T&Cs 29, 35, 36, 37 and 39 and parts of T&Cs 24, 27, 34, 38, 45 and 54 be deleted and replaced with the following:

15. The Forest Management Planning Manual shall describe planning provisions for the identification of areas of operations, including the following:

(a) Consistent with the long-term management direction for the management unit, criteria shall be developed to be used in the identification of areas that could reasonably be harvested during the ten-year period. The criteria shall be documented in a Forest Management Plan, and shall include considerations such as: industrial wood requirements and wood supply commitments, wildlife habitat requirements, emulation of natural disturbance patterns, operability factors, age class, visual aesthetics, and opportunities for harvesting fuelwood. All areas that meet the criteria shall be eligible for harvest, and shall be identified and mapped as optional harvest areas.

(b) Preferred areas for harvest for the ten-year period shall be identified and mapped up to the level of the available harvest area for each forest unit and portrayed for each five-year operational term. All other optional harvest areas may be ranked in order of preference.

(c) Harvest areas shall be selected and mapped for each of the two five-year operational terms based on public consultation on the preferred and optional harvest areas. Any areas within the areas selected for harvest, which are in excess of the projected industrial wood requirements and wood supply commitments for the management unit, shall be clearly identified and mapped as 'surplus areas'. The area selected for harvest, including the surplus areas, shall normally be equally balanced between the two five-year operational terms, and shall not exceed the available harvest area for each forest unit.

(d) For clearcut harvest operations, areas shall be selected for harvest in accordance with the most current direction and standards in MNR's approved implementation manual(s) or guide(s) relating to the emulation of natural disturbance patterns, as described in the Forest Operations and Silviculture Manual. Currently that direction provides for a range of sizes of clearcuts, which generally shall not exceed 260 hectares. Where clearcuts exceed 260 hectares, each such clearcut shall be recorded in the Forest Management Plan with the accompanying rationale.

(e) Areas for renewal and tending operations shall be identified and mapped for each of the two five-year operational terms. Those areas shall include: all of the areas selected for harvest; areas previously harvested during the term of the current or previous Forest Management Plan(s) and not yet renewed; areas of natural disturbances which require renewal; and areas which require tending.

(f) A contingency area for harvest operations, available for the ten-year period, shall also be identified and mapped separately. Contingency area shall be selected from the optional harvest areas, and include a minimum of one year, and a maximum of two years, of harvest operations. The contingency area shall serve as replacement area for harvest during the ten-year period of the Forest Management

Plan, in the event that circumstances arise causing the areas selected for operations to be no longer available. The full requirements of the applicable planning terms and conditions of this approval shall apply to the planning of access roads, harvest, renewal and tending operations, for the contingency area.

(g) Each Forest Management Plan shall contain a forecast of the level of activity (e.g., harvest, renewal and tending), based on the areas selected for operations for each five-year operational term. The forecast for renewal and tending shall include an estimate of the associated expenditures.

Silvicultural Ground Rules

MNR is recommending a more efficient and effective documentation of the silvicultural ground rules by providing a simplified and easy to use format for silvicultural practitioners and the public. This recommendation focuses the silviculture ground rule on the most commonly used silvicultural treatment package and provides for acceptable alternative silvicultural treatments, rather than documenting all possible silvicultural treatment packages that may be used.

The recommended term and condition includes the updated terminology of ecosite that replaces site type, to reflect the ecological land classification terminology.

The requirements to identify prescriptions in silvicultural ground rules that are exceptions to silviculture guides and to monitor those exceptions are retained.

MNR proposes to consolidate the requirements of T&Cs 25, 26, 40(a) and part of T&C 20 and Appendix 7 into a single new term and condition which sets out the planning and documentation requirements for silvicultural ground rules for the ten-year period of an FMP, and the requirement to link the silvicultural ground rules to the maps of the areas selected for operations for each of the five-year operational terms.

Recommended Term and Condition

MNR recommends that T&Cs 25, 26, 40(a) and part of T&C 20 and Appendix 7 be deleted and replaced with the following:

16. The Forest Management Planning Manual shall describe planning provisions for the development of Silvicultural Ground Rules, including the following:

(a) The Forest Management Plan shall contain Silvicultural Ground Rules for all of the forest unit-ecosite combinations on the management unit. The Silvicultural Ground Rules shall serve as the prescriptions for the areas of operations for the ten-year period of the Forest Management Plan. The Silvicultural Ground Rules shall be prepared and certified by a Registered Professional Forester, under the direction of the plan author, using the silvicultural guides which are described in the Forest Operations and Silviculture Manual.

(b) For each Silvicultural Ground Rule, the preferred silvicultural treatment package that is most commonly used on the management unit shall be identified, as well as acceptable alternative silvicultural treatments for each of the harvest, renewal and tending activities.

(i) If a Silvicultural Ground Rule includes a treatment which is not recommended in the applicable silvicultural guide, that treatment shall be recorded as an 'exception'. The rationale for that 'exception' shall be

provided, and the monitoring program for the Forest Management Plan shall describe the methods that will be used to determine the effectiveness of that 'exception' silvicultural treatment.

- **(ii) On the maps of areas selected for operations for each of the five-year operational terms of a Forest Management Plan, the areas selected for operations shall be cross-referenced to the Silvicultural Ground Rules.**
- **(iii) At the time of implementation of operations, in the event that the actual site conditions encountered are found to be different than those previously identified in the Forest Management Plan, then other relevant approved alternative silvicultural treatments in the Silvicultural Ground Rules can be selected.**

Silvicultural Treatments of Special Public Interest

MNR proposes to retain and update the requirements of T&C 40(b) in a new term and condition that sets out the requirement to identify silvicultural treatments of special public interest on the maps of areas selected for operations for each five-year operational term of an FMP. MNR is recommending that areas available for fuelwood harvesting be specifically identified on maps of areas selected for operations rather than a general forecast of potential areas where merchantable or unmerchantable timber may become available.

Recommended Term and Condition

MNR recommends that T&C 40(b) be deleted and replaced with the following:

17. The Forest Management Planning Manual shall describe planning provisions for silvicultural treatments of special public interest, including the following:

- **(a) In the planning of operations for each five-year operational term, locations where the following silvicultural treatments of special public interest are likely to occur shall be portrayed on the maps of the areas selected for operations:**
  - **(i) candidate prescribed burns;**
  - **(ii) areas proposed for aerial application of herbicides;**
  - **(iii) if applicable, areas which have been identified as eligible for insect pest management, and areas proposed for aerial application of insecticides, as a result of the application of the planning procedure for insect pest management programs; and**
  - **(iv) areas available for fuelwood.**
- **(b) This information shall represent the best estimate of proposed operations at the time of operational planning, and shall not limit the selection of any other approved alternative silvicultural treatments in the Silvicultural Ground Rules at the time of implementation of operations.**

Area of Concern Prescriptions

Based on implementation experience, MNR is recommending a more effective and efficient approach to documentation requirements for area of concern prescriptions to reduce repetitive documentation when prescriptions; follow specific direction or recommendations from an implementation manual, are prepared for groups of areas of concerns with common values and involve proposals from other planning exercises.

MNR is recommending that the development of prescriptions for areas of concern which involve tourism or recreation values, includes the consideration of visual aesthetics, which may include the use of viewscape analysis techniques.

MNR proposes to consolidate the requirements of T&Cs 41 to 44, parts of T&Cs 17 and 20 and the associated Appendices 5 and 7, and parts of T&Cs 24, 54 and 103(e) into a single new term and condition which sets out the planning and documentation requirements for Areas of Concern for each five-year operational term of an FMP.

Recommended Term and Condition

MNR recommends that T&Cs 41 to 44, parts of T&Cs 17 and 20 and the associated Appendices 5 and 7, and parts of T&Cs 24, 54 and 103(e) be deleted and replaced with the following:

18. The Forest Management Planning Manual shall describe planning provisions for the development of operational prescriptions for Areas of Concern, including the following:

(a) Areas of Concern are areas that contain natural resource features, land uses and values that may be affected by forest management operations. These natural resource features, land uses and values are identified on the values maps for the management unit, and include all lakes and streams that appear on the maps of the areas selected for operations.

(b) In the planning of operations for each five-year operational term, operational prescriptions for Areas of Concern shall be prepared and documented in a table and clearly portrayed on the maps of areas selected for operations.

(c) Operational prescriptions for Areas of Concern shall be prepared for individual Areas of Concern, or groups of Areas of Concern with common natural resource features, land uses or values, using the applicable implementation manuals (guides) which are described in the Forest Operations and Silviculture Manual. Operational prescriptions for Areas of Concern may include reserves (i.e., prohibition of operations), modified operations (i.e., specific conditions or restrictions on operations) or regular operations (i.e., in accordance with the Silvicultural Ground Rules), individually or in combination.

(d) For operational prescriptions for individual Areas of Concern, or groups of Areas of Concern with common natural resource features, land uses or values, which apply the specific direction or recommendations in an implementation manual (guide), documentation of the applicable section of the implementation manual (guide) shall be provided in the Forest Management Plan.

(e) If an operational prescription for an individual Area of Concern, or a group of Areas of Concern with common natural resource features, land uses or values, must be developed in the absence of specific direction or recommendations in an implementation manual (guide), there shall be a consideration and an environmental analysis of alternative prescriptions, and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. Any objections to such a prescription by affected and interested parties shall also be documented.

(f) Results of other planning exercises which involve proposed operational prescriptions that directly relate to forest management activities shall be made available for public review during the appropriate stages of public consultation. If the public review does not support the proposed operational prescription, the requirements of part (e) of this term and condition shall apply. If the public review supports the proposed operational prescription, no further planning shall be required and the rationale for that prescription, including the consideration of the comments received from affected and interested parties, shall be documented in the Forest Management Plan.

(g) For Areas of Concern which involve tourism or recreation values, there shall be consideration of visual aesthetics, which may include the use of viewscape

analysis techniques, in the development of the prescriptions. There shall be a consideration and an environmental analysis of alternative prescriptions, and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. Any objections to such a prescription by affected and interested parties shall also be documented.

(h) If an operational prescription is developed for an individual Area of Concern, or a group of Areas of Concern with common natural resource features, land uses or values, that differs from the specific direction or recommendations in an implementation manual (guide), there shall be consideration and environmental analysis of alternative prescriptions and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. The operational prescription shall be recorded in the Area of Concern prescriptions table as an 'exception', and the monitoring program for the Forest Management Plan shall describe the methods which will be used to monitor the effectiveness of that 'exception' prescription.

Report on Protection of Identified Aboriginal Values

In the past, Reports on the Protection of Identified Aboriginal Values have been limited to those management units where the Aboriginal communities chose to participate in the optional Forest Management Native Consultation program. MNR recognizes the value of these reports and the benefits to forest management planning.

MNR is recommending that these reports be prepared for all management units.

MNR proposes to enhance the requirements of T&C 57 and Appendix 10 regarding the preparation and content of a Report on Protection of Identified Native Values.

Recommended Term and Condition

MNR recommends that T&C 57 and Appendix 10 be deleted and replaced with the following:

19. The Forest Management Planning Manual shall describe provisions for a Report on Protection of Identified Aboriginal Values applicable to Aboriginal communities in or adjacent to the management unit during the planning of operations for each five-year operational term, including the following:

(a) The planning team shall produce a preliminary Report on Protection of Identified Aboriginal Values that shall include:

- **(i) a summary of proposed operations and a discussion of proposed road corridors of interest to the Aboriginal community;**
- **(ii) the most current version of the values map and the Aboriginal values map;**
- **(iii) a discussion of prescriptions for specific Areas of Concern associated with identified Aboriginal values; and**
- **(iv) a discussion of how local Aboriginal hunting, fishing, trapping and gathering**

activities have been addressed in the planning of forest management operations.

(b) The planning team shall produce a final Report on Protection of Identified Aboriginal Values that shall include:
  - **(i) a summary of the draft Forest Management Plan;**
  - **(ii) the updated version of the values map and the updated Aboriginal values map;**
  - **(iii) a discussion of selected road corridors of interest to the Aboriginal community;**
  - **(iv) a discussion of the updated prescriptions for specific Areas of Concern associated with identified Aboriginal values; and**
  - **(v) an updated discussion of how local Aboriginal hunting, fishing, trapping and gathering activities have been addressed in the planning of forest management operations.**

Improving Silvicultural Planning

MNR is recommending that a review and analysis be undertaken to assist in forecasting the required level of renewal and tending and associated expenditures to achieve the FMP objectives. That analysis shall consider the level and effectiveness of past silvicultural activities and associated expenditures to assist in making improvements to the silvicultural program.

This analysis will also support the determination of appropriate renewal rates as part of Crown charges that are deposited to the Forest Renewal Trust that provides funding for the silvicultural program on the management unit.

MNR proposes to replace the requirements of parts of T&C 38 with a new term and condition that supports improved silvicultural planning.

Recommended Term and Condition

MNR recommends that T&C 38 be deleted and replaced with the following:

20. The Forest Management Planning Manual shall describe planning provisions for silvicultural planning, including the following:

(a) In the preparation of a Forest Management Plan, an analysis shall be undertaken by a Registered Professional Forester to determine the necessary levels of renewal and tending activities, and associated expenditures required to achieve objectives described in the Forest Management Plan. During the planning of operations for the second five-year operational term that analysis shall be updated. The analysis shall be documented and shall include a discussion of the following:
  - **(i) the level of previous renewal and tending operations,**
  - **(ii) the silvicultural effectiveness of previous renewal and tending operations,**
  - **(iii) the expenditures associated with previous renewal and tending operations, and**
  - **(iv) recommended changes that may affect the future level, effectiveness, and expenditures associated with the forecasted renewal and tending operations.**

Monitoring Program

A monitoring program continues to be an important component of planning and implementing forest management activities to ensure operations are being implemented as planned, to collect and analyze information on effectiveness of prescriptions for use in future planning efforts. MNR is recommending that forest management plans continue to describe monitoring provisions and in particular forest operations inspections, monitoring of exceptions to implementation manuals and monitoring to determine regeneration success.

MNR proposes to retain and update the requirements of T&C 55 in a new term and condition that sets out the documentation requirements in an FMP for a program for monitoring the implementation of operations for each five-year operational term of an FMP.

Recommended Term and Condition

MNR recommends that T&C 55 be deleted and replaced with the following:

21. The Forest Management Planning Manual shall describe planning provisions for monitoring operations, including the following:

(a) During the planning of operations for each five-year operational term provisions for monitoring operations shall be prepared and documented, and shall include:

(i) a general description of the forest operations inspection program for the management unit and specific provisions for monitoring operations in individual Areas of Concern and groups of Areas of Concern with common values;

(ii) a description of monitoring which shall be used to determine the effectiveness of any silvicultural treatments which are 'exceptions' to the recommendations in the silvicultural guides;

(iii) a description of monitoring which shall be used to determine the effectiveness of prescriptions for Areas of Concern which are 'exceptions' to the specific direction or recommendations in the applicable implementation manuals (guides); and

(iv) a description of the program for carrying out assessments of regeneration success for both naturally and artificially regenerated areas, including assessments that are used in the Great Lakes-St. Lawrence forest region.

(b) Monitoring descriptions shall include:

(i) the identification of the methods which shall be used;

(ii) the timing and duration of monitoring;

(iii) the documentation and reporting of monitoring results; and

(iv) the opportunities for Local Citizens Committee members to participate in monitoring.

3.1.9 Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs

Current Requirements

T&Cs 66, 67 and 69 and the associated Appendices 12 to 14, and parts of T&Cs 1, 3, 6, 8(b), 60, 61, 64, 70 and 71 and the associated Appendices 2(B), 3(B), 3(E), 4(B) and 15 of the current EA Approval prescribe the requirements for the preparation of contingency plans, amendments to forest management plans, and insect pest management programs.

T&C 67 and Appendix 13 and parts of T&Cs 1, 3, 60 and 61 prescribe the requirements for the preparation, review and approval of amendments to an FMP, when changes are required during the term of the approved FMP. Parts of T&Cs 6 and 8(b) and Appendices 2(B), 3(B), 3(E) and 4(B) prescribe the requirements for public consultation in the preparation of amendments to an approved FMP. T&Cs 70 and 71 and Appendix 15 prescribe the steps in the bump-up procedure which enables interested parties to request that the Minister of Environment and Energy order an individual environmental assessment of specific forest management operations proposed in a major amendment to an approved FMP. Part of T&C 64 prescribes the steps in the issue resolution procedure which applies during the planning of amendments to forest management plans and contingency plans, and includes requirements for the production of written decisions by MNR District Managers and MNR Regional Directors within specified timeframes.

T&C 66 and Appendix 12 and parts of T&Cs 1, 3, 60 and 61 prescribe the requirements for the preparation, review and approval of a contingency plan, which is required when an FMP can not be prepared and approved by the scheduled renewal date. Parts of T&Cs 6 and 8(b) and Appendices 2(B), 3(B), 3(E) and 4(B) prescribe the requirements for public consultation in the preparation of a contingency plan.

T&C 69 and Appendix 14 prescribes the requirement for the preparation, review and approval of an insect pest management program, which is required when there is a major insect pest infestation. Parts of T&Cs 6 and 8(b) and Appendices 2(B), 3(B), 3(E) and 4(B) prescribe the requirements for public consultation in the preparation of an insect pest management program. T&Cs 70 and 71 and Appendix 15 prescribe the steps in the bump-up procedure which enables interested parties to request that the Minister of Environment and Energy order an individual environmental assessment of specific forest management activities proposed in an insect pest management program.

> ***T&C 1***
>
> *Timber Management Plans, amendments to Timber Management Plans, and Contingency Plans shall be prepared for each forest management unit in Ontario in accordance with the timber management planning requirements described in these terms and conditions.*

> ***T&C 3***
>
> *(a) Each Timber Management Plan, each amendment to a Timber Management Plan, and each Contingency Plan shall be prepared by a Registered Professional Forester, who shall be the Plan author, assisted by an interdisciplinary planning team and Local Citizens Committee. Planning teams shall include representatives of the various programs of the Ministry of Natural Resources, including persons with expertise in the areas of timber management, fish and other wildlife*

biology, lands administration, parks management, fire management, and enforcement. The district manager may assign additional responsibilities to specific planning team members with regard to concerns or interests not represented on the planning team. The Local Citizens Committee will appoint a representative of the committee to serve as a member of the timber management planning team.

(b) *The district manager will appoint the planning team and identify its members in the Notice of Invitation to Participate.*

(c) *On management units where the Plan is prepared by companies the company shall select the Plan author. The planning team shall in this event include an MNR Registered Professional Forester.*

(d) *When the district manager, in consultation with other government ministries and agencies, identifies matters of specific interest to them which will be addressed in the Timber Management Plan, representatives of those ministries and agencies will be invited to act as advisors to the planning team. This role is available to any government ministry or agency, including those agencies responsible for native affairs. For Ministry-prepared plans, the district manager may invite representatives from forest companies operating on the forest management unit to act as advisors to the planning team. The Ministry of Environment and Energy may attend planning team meetings as it decides.*

(e) *All Timber Management Plans shall contain a list of all planning team members including the Plan author, all planning team advisors and all Plan reviewers, with their job titles and/or affiliations, and a list of all members of the Local Citizens Committee and their affiliations if any.*

(f) *The planning team will be chaired by the Plan author.*

1

T&C 6

Notification of various stages of timber management planning and operations shall be given to the appropriate persons, including interested and affected persons and organizations and the general public. The identification of those persons and organizations is provided in Appendix 2.

2

T&C 8

(a) *Formal public consultation opportunities shall be provided at four stages in the timber management planning process for each Timber Management Plan, as set out in Conditions 9 to 12. These opportunities include an option for native communities to choose additional consultation and documentation opportunities, which is referred to in these terms and conditions as the Timber Management Native Consultation Program (i.e. Conditions 10(b)(i) and 11(b)(i) and Appendix 10). [SEE FIGURE 1]*

(b) *Public Notices shall be issued at each stage of the public consultation process. The timing and contents of the Public Notices are set out in Appendix 3. Details of the minimum information available at each stage of the public consultation process are set out in Appendix 4.*

3

T&C 60

Each Timber Management Plan, amendment to a Timber Management Plan, and Contingency Plan shall be prepared by a Registered Professional Forester who shall be the Plan author, and will be so certified in accordance with the Crown Timber Act, *R.S.O. 1990, c. C.51.*

4

T&C 61

Each Timber Management Plan, amendment to a Timber Management Plan, and Contingency Plan shall be recommended for approval by the appropriate district manager. In making this recommendation, the district manager shall certify that:

(a) *the Plan has been prepared in accordance with this approval and with the requirements of the Timber Management Planning Manual for Crown Lands in Ontario, as amended in accordance with Condition 90;*

(b) relevant policies and other obligations have been considered, including integrated resource management policy, and general government policies and obligations related to native people and any agreements with native people specific to the management unit;

(c) the Plan has been prepared in accordance with the appropriate implementation manuals. In the event that the Plan contains prescriptions which differ from specific direction as to the appropriate prescription or with recommendations in the applicable implementation manuals, the specific section of the Plan which provides documentation of the "exception" and the reasons for the "exception" shall be referenced in the district manager's Certification.

1

T&C 64.

Where there is an issue during the preparation of a Timber Management Plan, plan amendment, insect pest management program, or a bump-up request, any person concerned about the issue shall follow this issue resolution procedure in order to ensure that the issue is dealt with fairly, fully and promptly.

(a) The concerned person shall tell the Plan author about the issue, preferably in writing, and offer a proposed solution.

(b) The Plan author shall meet with the person in order to resolve the issue. A resolution to the concern shall be appropriately recorded pursuant to the Area of Concern process (Conditions 41 to 44) or in supplementary documentation to the Plan (Appendix 9, section 1(h)). If these discussions do not produce a resolution, the Plan author shall communicate the issue in writing to the MNR district manager and to the Local Citizens Committee.

(c) The district manager shall arrange and attend a meeting of the Plan author, the concerned person and one or more members of the Local Citizens Committee in order to seek a resolution. If it is helpful to achieving a resolution, the district manager shall provide for a site visit to be taken.

(d) If a resolution has not been achieved, the district manager shall ask each of the Plan author, the complainant and the Local Citizens Committee to recommend their proposed solutions in writing within 15 days. The district manager shall make a decision on the issue within 15 days of receiving the submissions, and shall send a copy of the decision to the regional director, the person concerned and the Local Citizens Committee.

(e) Written submissions from all parties involved, as well as any recommendations from the Local Citizens Committee, shall be included in the supplementary documentation which accompanies the Timber Management Plan or Plan amendment (Appendix 9, section 1(h)). This documentation shall form part of any record produced by MNR to the Ministry of Environment and Energy and Energy if there is a bump-up request.

(f) If the person concerned is dissatisfied with the decision of the district manager, a request may be made for a review by the regional director. The request shall be made within 30 days of receiving the district manager's decision. The regional director will consider the views of the Local Citizens Committee, the Plan author and the district manager. The regional director shall provide a decision with written reasons for adopting or rejecting the decision of the district manager within 15 days.

(g) The schedule specified for issue resolution may be compressed where necessary for insect pest management program issues.

2

T&C 66

Where a Timber Management Plan cannot be prepared and approved before the required date, a Contingency Plan shall be prepared and approved as an interim Timber Management Plan before operations may proceed. The particulars of this condition are set out in Appendix 12.

3

T&C 67

Amendments to an approved Timber Management Plan may be required during the five-year term. The planning process for any such amendments may be initiated by any person, by making a written request for an amendment to the district manager. Any such request shall be accompanied by sufficient information to allow the district manager to determine whether the proposed amendment should proceed, and whether the amendment should be treated as administrative, minor or major. The *particulars of this condition are set out in Appendix 13.*

1

T&C 69

When programs for insect pest management are required, they shall be planned in accordance with the planning procedure for insect pest management programs.
Particulars of this condition are set out in Appendix 14

2

T&C 70

A "bump-up" request is a request from any person to the Minister of Environment and Energy for the designation of specific proposed timber management activities to the status of an individual environmental assessment under The Environmental Assessment Act, *R.S.O. 1990, c. E.18. A request may be made during the preparation of each Timber Management Plan; each major amendment to an approved Timber Management Plan; and each program for insect pest management. The process governing bump-up requests is set out in Appendix 15.*

3

T&C 71

The Ministry of Environment and Energy and Energy shall not determine a bump-up request sooner than 30 days following MNR approval of the Plan and Notice of Plan inspection. Subject to the provisions of Appendix 15, the lands subject of an outstanding issue or a bump-up request shall be excluded from operations objected to until resolution of the bump-up request.

4

Appendix 2: Public Notice Requirements: Service

Service Of Notice With Respect To Timber Management Planning

B: Notices for Timber Management Plans:

1. *Notices associated with Contingency Plans, amendments to Timber Management Plans and insect pest management programs which include proposals for projects involving aerial application of insecticides (described in Appendix 12, 13, and 14 respectively) shall be served upon the same persons and organizations and by the same methods, as those for Timber Management Plans, with whatever modifications are necessary in the circumstances.*

5

Appendix 3: Public Notice Requirements: Timing And Notice Contents

B: Notices for Contingency Plans, Amendments and Insect Pest Management Programs:

1. *The timing and contents of the notices required for Contingency Plans, amendments to Timber Management Plans and insect pest management programs which include proposals for projects involving aerial application of insecticides (described in Appendix 12, 13 and 14 respectively) shall be similar to those used for Timber Management Plans, with whatever modifications are necessary in the circumstances. Notices will normally contain the following information:*
   - *(a) a statement of the purpose of the public consultation opportunity;*
   - *(b) A map of the forest management unit/District for which the Contingency Plan, amendment or insect pest management program is being prepared;*
   - *(c) a description of the subject matter of the planning exercise;*
   - *(d) the particulars and schedule for any additional formal public consultation opportunities;*
   - *(e) the method by which the public may obtain additional information on the planning exercise;*
   - *(f) a request for comments;*
   - *(g) the names of appropriate contact people;*
   - *(h) a brief explanation of how comments received will be handled under relevant provisions of the*

Freedom of Information and Protection of Privacy Act; *and*

(i) *a statement on the relevant opportunities for bump-up.*

Timing And Contents Of Notices With Respect To Operational Matters

E: Notices for Timber Management Plans, Contingency Plans, Amendments and Insect Pest Management Programs:

1. *Notices published in public print media for Timber Management Plans, Contingency Plans, amendments and insect pest management programs shall normally contain the following information, in concise non-technical language:*
   - (a) *A statement of the purpose of the notice;*
   - (b) *A map of the relevant forest management unit/district;*
   - (c) *a description of the subject matter of the planning exercise;*
   - (d) *the schedule for any additional formal public consultation opportunities;*
   - (e) *the method by which the public may obtain additional information on the planning exercise;*
   - (f) *a request for comments;*
   - (g) *the names of appropriate contact people;*
   - (h) *a brief explanation of how comments received will be handled under relevant provisions of the Freedom of Information and Protection of Privacy Act; and*
   - (i) *a statement on the relevant opportunities for bump-up.*

1

Appendix 4: Information Available For Public Consultation

B: Contingency Plans, Amendments and Insect Pest Management Programs:

1. *Information available for public review during planning for Contingency Plans and amendments to Timber Management Plans (as described in Condition 66; Appendix 12 and Condition 67; Appendix 13 respectively) shall be comparable to the information available at similar stages for Timber Management Plans, with whatever modifications are necessary in the circumstances.*
2. *Information available for public review during planning for insect pest management programs which include proposals for projects involving aerial application of insecticides (as described in Appendix 14) shall include:*

a) *Stage One: Information Centre:*
   - (i) *insect infestation map(s) and population forecasts;*
   - (ii) *maps of areas eligible for insect pest management;*
   - (iii) *the most current values map(s) for the affected forest management units in the District;*
   - (iv) *the evaluation of management options (described in Appendix 14);*
   - (v) *the selected course of action, with reasons;*
   - (vi) *draft project proposals for specific aerial insecticide projects, and associated maps (described in Appendix 17);*
   - (vii) *the results of the insect pest management program in the area for the same insect species in the previous year (if any).*

b) *Stage Two: Insect Pest Management Program Inspection:*
   - (i) *for specific aerial insecticide projects, the approved project descriptions and project plans (described in Appendix 17); and*
   - (ii) *In addition, other relevant information shall be available, including the information described in Appendix 4, part B, sections 2(a)(i)-(v) and (vii).*

2

Appendix 12: Contingency Plans

A "Contingency Plan" is an interim Timber Management Plan which is required if a Timber Management Plan cannot be prepared and approved by the required date. In cases where a Contingency Plan is required, the following procedure shall apply.

1. To initiate the planning process for a Contingency Plan, MNR shall submit a planning proposal to the Director of the Environmental Assessment Branch, Ministry of Environment and Energy. A copy of the proposal will also be provided to the appropriate regional office of the Ministry of Environment and Energy. The proposal shall describe:
   (a) The need for a Contingency Plan;
   (b) The proposed contents of the Contingency Plan;
   (c) The proposed period of time to be covered by the Contingency Plan;
   (d) a schedule for its production, review and approval; and
   (e) the recommendations, if any, of the Local Citizens Committee.

Upon endorsement of the planning proposal by the Director of the Environmental Assessment Branch, Ministry of Environment and Energy, production, review and approval of the Contingency Plan will proceed.

2. The schedule for the preparation of the Contingency Plan shall include provisions for public consultation. The formal public consultation provisions will be dependent upon the degree to which proposed operations have already been subjected to public review in the timber management planning process. At a minimum, the Local Citizens Committee shall be consulted in the design and implementation of any Contingency Plan, if possible.
3. At a minimum, a Notice of Contingency Plan Inspection shall be issued at least 15 days before operations are scheduled to proceed. Requirements for service of this Notice are listed in Appendix 2, part B. The timing and contents of the Public Notice are listed in Appendix 3, part B. Details of the minimum information available are listed in Appendix 4, part B, section 1.
4. A copy of the approved Contingency Plan shall be filed in the same locations as approved Timber Management Plans (as provided in Condition 65), and provided to the appropriate regional office of the Ministry of Environment and Energy.

1

Appendix 13: Amendments To Timber Management Plans

An "amendment" is a change to an approved Timber Management Plan during its five-year term. In cases where an amendment to an approved Timber Management Plan has been requested, the following procedure shall apply.

Categorizing Amendments:

1. In determining whether planning for the amendment should proceed, and if so the appropriate category of amendment, the district manager shall, in consultation with the Local Citizens Committee, assess the extent of public consultation and formal MNR review and approval which is required, in light of the particular circumstances of the proposal and record the Local Citizens Committee's disagreements with the categorization of amendments. This decision will normally be made within 15 days of the receipt of the request.
2. In determining whether planning for the amendment should proceed, and if so the appropriate category of amendment, the following factors shall be considered:
   (a) Whether there are legitimate time constraints which must be met for reasons of public safety, biological necessity, industrial necessity, or public convenience and necessity;
   (b) Whether there has been previous notification that the requested amendment will be required, and the degree to which planning and public consultation has taken place previously (eg. Decisions deferred in the Timber Management Plan; amendments required after public consultation in other planning processes);
   (c) The adequacy of the information concerning the resource features, land uses and values potentially affected and the anticipated potential effects of the requested operations; and
   (d) the number of previous requests for similar amendments.

Salvage Operations:

3. Where salvage operations are feasible as a result of a natural catastrophe the district manager in consultation with the Local Citizens Committee may take such steps as are necessary to facilitate the expeditious planning and implementation of such operations to avoid waste.

Administrative Amendments:

4. *Where the district manager decides that the amendment should proceed, and that the appropriate category of amendment is "administrative", the district manager shall approve the amendment when the necessary planning has been completed.*

Minor Amendments:

5. *Where the district manager decides that the amendment should proceed, and that the appropriate category of amendment is "minor", the district manager shall direct the necessary planning and review of the proposed amendment to proceed.*

Public Consultation in the Preparation of Minor Amendments:

6. *(a) One formal public consultation opportunity shall be provided in the timber management planning process for minor amendments, in the form of a Notice of Minor Amendment Inspection. This Notice shall be issued at least 15 days prior to a final decision on approval, and shall provide direction on how to obtain access to the amendment documentation. The purpose of this public consultation opportunity is to provide a formal opportunity for the public to determine whether they have concerns about the amendment.*
   (b) Requirements for service of this Notice are listed Appendix 2, part B. The timing and contents of the Public Notice are listed in Appendix 3, part B. Details of the minimum information available are listed in Appendix 4, part B, section 1.
7. *(a) Where the response to the Public Notice indicates no significant concerns, or where any concerns received can be resolved with no substantial change to the proposed amendment, the district manager shall approve the amendment.*
   (b) Where the response to the Public Notice indicates significant unresolved concern about the proposed amendment, the amendment request shall be re-categorized as "major", unless the district manager, with the concurrence of the regional director, determines that the objection is unreasonable or that the amendment is a matter of urgency.

Major Amendments:

8. *Where the district manager decides that the amendment should proceed and that the appropriate category of amendment is "major", the district manager shall direct the necessary planning of the proposed amendment to proceed.*

Public Consultation in the Preparation of Major Amendments:

9. *Formal public consultation opportunities shall be provided at two stages in the timber management planning process for major amendments. These opportunities include an option for native communities who have chosen additional consultation and documentation opportunities in the preparation of the Timber Management Plan to continue the Timber Management Native Consultation Program for the major amendment.*
10. *Public Notices shall be issued at each stage of the public consultation process. Requirements for service of these Notices are listed in Appendix 2, part B. The timing and contents of the Public Notices are listed in Appendix 3, part B. Details of the minimum information available at each stage of the public consultation process are listed in Appendix 4, part B, section 1.*
11. *(a) Stage One of the public consultation process for major amendments shall commence with the issuance of a Notice an Information Centre. This Information Centre shall be held during the development of proposals for the major amendment to the Timber Management Plan. The purpose of this public consultation opportunity is to provide a formal opportunity for public comment on the assembly and analysis of background information and the evaluation of alternatives; to generate additional alternatives for consideration; and to request additional contributions to the information base and other information to be considered in decision-making; and to advise the public that a request may be made to the Minister of Environment and Energy for a bump up of the major amendment to individual environmental assessment status.*
    (b) (i) Timber Management Native Consultation Program: In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, at the time of issuance of the Notice an Information Centre, a Preliminary Report on Protection of Identified Native Values (described in Condition 57) shall be provided to the

native community. A Notice shall be issued to the native community advising of the agreed forum for consideration of the Report. The purpose of this stage of consultation is for the community to comment on the Report and all other analysis of background information and evaluation of alternatives for the Plan; to generate additional alternatives for consideration; and to provide information on the native communities' preferred alternatives;

(ii) Where a native community has chosen to participate in the standard public consultation process, MNR shall, with whatever modifications are necessary, arrange a special Information Centre at a location convenient to that community, upon request.

12. *After completion of public review, the proposed amendment shall be finalized and submitted to the regional director for approval.*
13. *(a) Stage Two of the public consultation process for major amendments shall commence with the issuance of a Notice of Major Amendment Inspection. This notice shall be issued upon MNR approval of the major amendment, and shall provide direction on how to obtain access to the amendment documentation. The purpose of this public consultation opportunity is to advise the public that the amendment has been approved, and to provide a formal opportunity for the public to examine the results of the planning process.*

    (b) Timber Management Native Consultation Program: In those cases where the native community has chosen to be involved in the Timber Management Native Consultation Program, at the time of issuance of the Notice of Major Amendment Inspection, a Final Report on Protection of Identified Native Values (described in Condition 57) shall be provided to the native community. The purpose of this stage of consultation is to advise the native community that the amendment has been approved, and to provide a formal opportunity for the community to examine the results of the planning process.

Access to Amendment Documentation:

14. *All approved amendments shall form part of the Timber Management Plan. A copy of the approved amendment and the accompanying supplementary documentation shall be filed in the same locations as approved Timber Management Plans (as provided in Condition 65), and provided to the appropriate regional office of the Ministry of Environment and Energy.*

1

Appendix 14: Planning For Insect Pest Management Programs

When programs for insect pest management are required, the following planning procedure shall apply.

1. *(a) Multi-disciplinary District and Regional Committees will be established to produce a District insect pest management program. A member of the Local Citizens Committee shall be invited to serve on the district multi-disciplinary committee.*
    (b) Areas eligible for insect pest management will be identified.
    (c) For the areas eligible for insect pest management, there shall be consideration of the following management options:
        (i) no treatment;
        (ii) accelerated harvest operations;
        (iii) redirected harvest operations;
        (iv) salvage operations;
        (v) use of insecticides; and
        (vi) appropriate combinations of the foregoing options.
    (d) There shall be an evaluation of each management option which shall be documented, and consist of:
        (i) an assessment of the advantages and disadvantages of that management option for timber management purposes;
        (ii) an assessment of the advantages and disadvantages of that management option as they relate to potential effects on non-timber values identified in the areas eligible for insect pest management; and
        (iii) a discussion of the anticipated effectiveness of the option, and an estimate of the operational costs related to that management option.
    (e) The selection of the specific course of action shall be based on a comparison of the evaluations

of management options. The reasons for the selection of the specific course of action shall be provided.

(f) When considering the use of insecticides, where alternatives to chemical insecticides are commercially available, reasonably cost-effective, and approved federally and provincially for use, the Ministry will use such alternatives in preference to chemical insecticides.

2. Where the selected course of action involves accelerated harvest, re-directed harvest or salvage, the district manager shall determine whether an amendment to the approved Timber Management Plan is required. In such cases, the procedure outlined in Appendix 13 shall apply.

3. (a) Where the selected course of action involves the aerial application of insecticides, formal public consultation opportunities shall be provided at two stages in the preparation of specific project proposals for the insect pest management program.

   (b) Public Notices shall be issued at each stage of the public consultation process. Requirements for the service of these Notices are listed in Appendix 2, part B. The timing and contents of the Public Notices are listed in Appendix 3, part B. Details of the minimum information available at each stage of the public consultation process are listed in Appendix 4, part B, section 2.

4. (a) Stage One of the public consultation process for the preparation of specific project proposals for an insect pest management program shall commence with the issuance of a Notice of an Information Centre. The purpose of this public consultation opportunity is to provide a formal opportunity for public review and comment on the proposed insect pest management program and specific proposals for insect pest management projects, before decisions are made.

   (b) MNR shall, with whatever modifications are necessary, arrange a special Information Centre at a location convenient to local native communities, upon request.

5. After completion of public review of the project proposals for the insect pest management program, specific project descriptions shall be prepared and submitted for approval.

6. Stage Two of the public consultation process for the preparation of specific project proposals for an insect pest management program shall commence with the issuance of a Notice of Insect Pest Management Program Inspection. This notice shall be issued upon MNR approval of the program, and shall provide direction on how to obtain access to the insect pest management program documentation. The purpose of this public consultation opportunity is to advise the public that the insect pest management program has been approved, and to provide a formal opportunity for the public to examine the results of the planning process. In addition, this notice may serve as the notice of operations (described in Appendix 3, part D, section 1(a)) for projects involving the aerial application of insecticides.

1

Appendix 15: Bump-Up Procedure

1. The bump-up procedure may be initiated at any time during the planning process, but not later than 30 days following the final public notice with respect to each Timber Management Plan, each major amendment to an approved Timber Management Plan, and each program for insect pest management.
2. Any person who has a concern with respect to specific proposed timber management activities may initiate the bump-up procedure by requesting the Minister of Environment and Energy to direct MNR to undertake an individual environmental assessment of those activities. The request shall be in writing, and shall describe the nature of the concern and the reasons for the request. The Ministry of Environment and Energy shall provide a copy of the request to the Minister of Natural Resources, the MNR district manager and the Plan author immediately upon receipt of the request.
3. The Minister of Environment and Energy shall consider the request and before making his decision, shall provide specific notice to the Minister of Natural Resources to respond to the bump-up request within 15 days. The decision of the Minister of Environment and Energy will normally be made within 45 days after the last opportunity to make a bump-up request. In the case of insect pest management programs which include proposals for projects involving aerial application of insecticides, the decision of the Minister of Environment and Energy will normally be made within 30 days of the receipt of the response from the Ministry of Natural Resources and if this deadline cannot be met the Minister of Environment and Energy shall provide the reason for the delay to the

Minister of Natural Resources, the MNR district manager, the Plan author and the person requesting the bump-up.

4. *If a bump-up is requested while planning is ongoing, the planning exercise may proceed while the Minister of Environment and Energy considers the request.*
5. *If the Minister of Environment and Energy does not agree to the bump-up request, the Minister shall give written notice to the Minister of Natural Resources, the MNR district manager, the Plan author and the person requesting the bump-up that the request has been refused, together with reasons for the refusal.*
6. *If the Minister of Environment and Energy agrees to the bump-up request, the Minister shall give written notice to the Minister of Natural Resources, the MNR district manager, the person requesting the bump-up and the Plan author (where appropriate) that MNR will be required to prepare and submit an individual environmental assessment for review and approval under the* Environmental Assessment Act, *R.S.O. 1990, c. E.18. The specific timber management activities, and the areas of the management unit which are affected by the approved bump-up request shall be identified. In such circumstances, planning may continue and partial or conditional approval of activities may be granted by MNR, in respect of activities and areas unaffected by the approved bump-up request, with the concurrence of the Director of the Environmental Assessment Branch, Ministry of Environment and Energy.*
7. *Where there remains an outstanding bump-up request to the Minister of Environment and Energy at the time that activities are scheduled for implementation, partial or conditional approval of activities may be granted by MNR, upon notice to the bump-up requestor and with the concurrence of the Director of the Environmental Assessment Branch, Ministry of Environment and Energy, to permit appropriate operations to proceed in respect of activities and areas unaffected by the outstanding request.*

Implementation Experience

Amendments to Forest Management Plans

During the implementation of forest management plans, there are a number of circumstances that can result in a need to amend the approved FMP. Amendment provisions have been widely used to keep forest management plans current and address unforeseen circumstances. The EA Approval recognized this need to address changing conditions after plan approval and provided specific direction for a flexible amendment process. The FMP Manual reflected the EA Approval and further defined the amendment process and associated requirements. The use of the amendment process has allowed forest management plans to be updated to reflect current information.

Amendments have dealt with a range of topics from a relatively simple addition of a new value and associated area of concern planning to complex changes involving areas selected for operations, primary and secondary road locations, and associated area of concern planning. The current requirements allow for three categories of amendments (i.e. administrative, minor and major) with differing planning and public consultation requirements. Amendments were processed with the appropriate level of consultation, as determined by the category assigned. The majority of amendments have been administrative.

Local Citizens Committees played a key role in the determination of the amendment category by reviewing proposals and advising the MNR District Managers on the appropriate level of consultation required. Requests for amendments were categorized and approved according to the requirements of the EA Approval and the FMP Manual.

MNR has conducted a review of all plan amendments approved from May 19, 1994 to August 1, 2001 as part of preparing this Timber Class EA Review. Results of this review are described in a progress report on T&C 114(a)(ii) Amendments to Forest Management Plans that is included in Section 5.0 Progress Reports.

Of the total amendments approved 91% were administrative, 7% were minor, and 2% were major. The review of amendments showed that most amendments (76%) dealt with harvest, access, values and area of concern prescriptions. Amendments dealing with renewal and tending, salvage harvest, text and tables and silvicultural ground rules accounted for the remaining 24%.

The large amount of administrative amendments has resulted in significant demands on Local Citizens Committee's time and delays in operations. In response, some Local Citizens Committees have developed an approach with the MNR District Manager regarding the timing and level of their involvement for recurring circumstances, which avoids the need for a specific review by the committee of each and every proposed administrative amendment.

Practitioners have indicated many amendments have been related to water crossings. Often new site-specific information becomes available at the time of Annual Work Schedule preparation, has required adjustment to the 100 metre water crossing location as identified in the forest management plan. Practitioners have identified the need for a process that allows these changes to be addressed in the Annual Work Schedule.

Implementation experience has identified circumstances where amendments have been required to make adjustments to contingency plans. Most of these amendments were consistent with the contingency plan proposal endorsed by the Ministry of the Environment; however, practitioners have indicated the need to clarify the processing requirements for amendments that are not consistent with the previously endorsed contingency plan proposal.

Contingency Plans

MNR has conducted a review of all contingency plans approved from May 19, 1994 to September 1, 2001 as part of preparing this Timber Class EA Review. Results of this review are described in a progress report on T&C 114(a)(viii) Contingency Plans that is included in Section 5.0 Progress Reports. This report outlines the numbers of contingency plans approved, reasons for those contingency plans and some observations about their use.

A contingency plan is an interim FMP that permits operations to proceed when an approved FMP cannot be prepared or approved by the scheduled renewal date. A contingency plan proposal is prepared when circumstances arise that result in the need for a contingency plan. This proposal outlines the contents and the public consultation process for the contingency plan. The EA Approval provides the flexibility to establish plan content and public consultation appropriate for each contingency plan. The proposal is provided to the Ministry of Environment and Energy for their endorsement.

The two main circumstances where contingency plans have been required are a delay in plan review and approval that accounted for 60% and a delay in plan preparation that accounted for a further 30%. The remaining contingency plans were a result of management unit amalgamations and a result of the decision on the Divisional Court in *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)*.

There were a number of reasons for delays in plan review and approval, (e.g. unforeseen issues that arose late in the planning process). In these circumstances, contingency plan proposals could only be submitted one to three months prior to the scheduled implementation date. These contingency plans, were usually in effect for less than a year, contained non-contentious operations, previously viewed by the public. They have been prepared on the basis of the planning and public consultation effort associated with the delayed plan and as a result, the public inspection stage has been the only consultation required.

Delays in plan preparation have occurred for a variety of reasons (e.g. adjustment of plan renewal schedule). In these circumstances, the need for a contingency plan was known well ahead of time and the proposals were submitted at least nine months prior to the scheduled implementation of the contingency plan. These contingency plans, usually in effect for a one or two year period, often contained proposed operations, not previously viewed by the public and therefore required a greater degree of consultation.

The number of contingency plans has decreased during the time period examined (1994 to 2001). This was in part, due to the large number of contingency plans prepared to adjust planning schedules in 1995 and 1996.

Insect Pest Management Programs

The FMP Manual provides a planning process for an Insect Pest Management Program, consistent with T&C 69 and Appendix 14. Although used infrequently, Insect Pest Management Programs, which may be prepared at a management unit scale or at a District or larger scale, are necessary and important to provide forest protection to realize social, economic and environmental benefits.

In 1994, 1995 and 1996 a jack pine budworm outbreak in the area of Sudbury to Blind River and north prompted the application of the Insect Pest Management Program planning process. These three annual planning exercises resulted in no treatment, aerial spraying of insecticides, salvage harvest and accelerated harvest with appropriate amendments to forest management plans where necessary.

In addition, insect pest management was a consideration during the preparation of some forest management plans. The susceptibility of a particular forest type to an insect pest (e.g. mature balsam fir and white spruce forest types and spruce budworm) was used as one of the harvest selection criteria to identify areas as a priority for harvest.

Analysis of Implementation Experience

Amendments to Forest Management Plans

Experience with the current amendment process, with three amendment categories and varying levels of public consultation, provides a sound, practical approach to deal with the varying complexity associated with changes that are required to keep forest management plans current.

To reduce the number of amendments related to forest access road water crossings, MNR is recommending additional requirements for review and approval of forest access road water crossings in Annual Work Schedules. These additional requirements are addressed in Section 3.1.10 Annual Operations.

Implementation experience has indicated some concerns with respect to amendments to contingency plans that may not be consistent with the contingency plan proposal, endorsed by the Ministry of Environment and Energy. MNR is recommending an additional requirement to ensure that amendments to contingency plans are always implemented in accordance with endorsed contingency plan proposals.

MNR proposes to consolidate the requirements of T&C 67 and Appendix 13, and parts of T&Cs 1, 3, 6, 8(b), 60, 61, 70 and 71 and Appendices 2(B), 3(B), 3(E) and 4(B) and 15, into a single new term and condition that sets out the requirements for the preparation, review and approval of an amendment to an FMP, when a change to an approved FMP is required.

Recommended Term and Condition

MNR recommends that T&C 67 and Appendix 13, and parts of T&Cs 1, 3, 6, 8(b), 60, 61, 70 and 71 and Appendices 2(B), 3(B), 3(E) and 4(B) and 15 be deleted and replaced with the following:

22. The Forest Management Planning Manual shall describe planning provisions for amendments, including the following:

- **(a) An amendment shall be prepared when a change to an approved Forest Management Plan or an approved Contingency Plan is required. Any person can initiate the planning process for an amendment, by submitting a written request to the MNR District Manager. The request shall provide a brief description of the need for, and nature of, the proposed amendment. The MNR District Manager, in consultation with the Local Citizens Committee, shall decide if the proposed amendment should proceed, and the appropriate categorization of the amendment as administrative, minor or major. The MNR District Manager's decision shall consider, at a minimum, the following factors: the amount of planning and public consultation required for the proposed amendment, legitimate time constraints, the frequency of similar requests, and the adequacy of relevant information available at the time of the request.**
- **(b) All applicable planning and documentation requirements for a Forest Management Plan shall apply to the preparation of an amendment to a Forest Management Plan or a Contingency Plan. All amendments shall be certified by the plan author and the MNR District Manager, and after approval, shall be filed in the same locations as the approved Forest Management Plan. Public consultation provisions shall apply to major and minor amendments. The requirements for public consultation, including the contents of notices, the recipients of notices, and information availability, shall be similar to the requirements for a Forest Management Plan, with whatever modifications are necessary in the circumstances.**
- **(c) Major amendments shall be prepared with the participation of affected and interested parties, and there shall be a formal public consultation opportunity during the development of the proposed operations. Major amendments shall be reviewed by MNR district and regional staff, and approved by the MNR Regional Director. There shall also be a public inspection of the MNR-approved amendment, with an opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific forest management operations proposed in the major amendment.**
- **(d) Minor amendments shall be prepared in consultation with affected and interested parties, and reviewed by MNR district staff. Minor amendments shall be approved by the MNR District Manager, and there shall be a public inspection of the MNR-approved amendment.**
- **(e) Administrative amendments shall be reviewed by MNR district staff, and approved by the MNR District Manager.**

(f) Amendments to contingency plans must be consistent with the contingency plan proposal endorsed by the Ministry of Environment and Energy. Where an amendment request is not consistent with the endorsed contingency plan proposal, a new endorsement by the Ministry of Environment and Energy must be obtained.

(g) The Forest Management Planning Manual shall address amendment requirements to provide for the expeditious planning and implementation of salvage operations.

Contingency Plans

Implementation experience has demonstrated a continued need for the contingency plan mechanism as part of the EA Approval even though the number of contingency plans has remained relatively low during the latter part of the period examined.

During the implementation of the EA Approval, a need has been identified to clarify and provide for additional circumstances where preparation of a contingency plan is appropriate. These circumstances include adjustments to forest management planning schedules and provision of appropriate time for unscheduled plan renewal.

Implementation experience has shown that the amount of consultation required for the contingency plan depends on the circumstance under which the plan is being prepared. The requirements for public consultation of contingency plans should continue to consider the planning and public consultation efforts already undertaken.

MNR proposes to consolidate the requirements of T&C 66 and Appendix 12, and parts of T&Cs 1, 3, 6, 8(b), 60 and 61 and Appendices 2(B), 3(B), 3(E) and 4(B), into a single new term and condition that sets out the requirements for the preparation, review and approval of a contingency plan, which is required when special circumstances affect the implementation of a Forest Management Plan.

Recommended Term and Condition

MNR recommends that T&C 66 and Appendix 12, and parts of T&Cs 1, 3, 6, 8(b), 60 and 61 and Appendices 2(B), 3(B), 3(E) and 4(B) be deleted and replaced with the following:

23. The Forest Management Planning Manual shall describe planning provisions for the development of a Contingency Plan, including the following:

(a) A Contingency Plan shall be prepared when special circumstances affect the implementation of a Forest Management Plan. These circumstances may include the following:

(i) delays in preparation and approval of a Forest Management Plan,

(ii) adjustments to forest management planning schedules associated with the amalgamation of management units,

(iii) adjustments to forest management planning schedules to improve the timing of forest management planning across the province, and

(iv) appropriate time to allow for unscheduled plan renewals.

(b) To initiate the planning process for a Contingency Plan, a proposal shall be submitted by the MNR Regional Director to the Director, Environmental Assessment and Approvals Branch, Ministry of Environment and Energy for endorsement. The proposal shall describe the need for, the term of, and the

content of the Contingency Plan, public consultation to date, and provisions for additional public consultation in its preparation. The public consultation provisions shall be similar to the requirements for a Forest Management Plan, and may vary depending on the amount of public consultation to date of the proposed operations.

(c) Upon Ministry of Environment and Energy endorsement of the proposal, preparation of the Contingency Plan shall proceed. As in the case of a Forest Management Plan, a Contingency Plan shall be prepared by a Registered Professional Forester, who shall be the plan author, assisted by a planning team and a Local Citizens Committee. The Contingency Plan shall be certified by the plan author, and reviewed by MNR district and regional staff. Upon satisfactory completion of changes in response to the MNR review, the Contingency Plan shall be certified and recommended for approval by the MNR District Manager in accordance with the same requirements as for a Forest Management Plan, approved by the MNR Regional Director, and filed in the same locations as the approved Forest Management Plan.

Insect Pest Management Programs

MNR is not recommending any change to the Insect Pest Management Program requirements other than consolidation. The program has proven to be successful in responding to insect pest concerns.

MNR proposes to consolidate the requirements of T&C 69 and Appendix 14, and parts of T&Cs 6, 8(b), 70 and 71 and Appendices 2(B), 3(B), 3(E) and 4(B) and 15, into a single new term and condition that sets out the requirements for the preparation, review and approval of an insect pest management program, which may be required to address a major insect pest infestation.

Recommended Term and Condition

MNR recommends that T&C 69 and Appendix 14, and parts of T&Cs 6, 8(b), 70 and 71 and Appendices 2(B), 3(B), 3(E) and 4(B) and 15 be deleted and replaced with the following:

24. The Forest Management Planning Manual shall describe planning provisions for insect pest management programs, including the following:

(a) When there is a major insect pest infestation, a District insect pest management program shall be developed by a multi-disciplinary team, comprised of MNR district and regional staff and a representative(s) of the Local Citizens Committee(s). Areas eligible for insect pest management shall be identified, and a range of management options shall be considered and documented. The following management options shall be considered:

(i) no treatment;
(ii) accelerated harvest,
(iii) redirected harvest,
(iv) salvage harvest,
(v) the use of insecticides, and
(vi) appropriate combinations of the foregoing options.

(b) If the selected course of action is accelerated, redirected or salvage harvest operations, the MNR District Manager shall determine if an amendment to an approved Forest Management Plan(s) is required, and if so, the provisions for

Forest Management Plan amendments shall apply.

(c) If the selected course of action involves the aerial application of insecticides, public consultation provisions shall apply. The requirements for public consultation, including the contents of notices, the recipients of notices, and information availability, shall be similar to the requirements for a Forest Management Plan, with whatever modifications are necessary in the circumstances.

(d) There shall be a formal public consultation opportunity during the development of the proposed insect pest management program and specific project proposals. The insect pest management program and specific projects that involve the aerial application of insecticides shall be approved by the MNR Regional Director. There shall also be a public inspection of the approved insect pest management program and specific projects that involve the aerial application of insecticides. There shall be an opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific forest management activities in the approved insect pest management program.

(e) When considering the use of insecticides, where alternatives to chemical insecticides are commercially available, reasonably cost-effective, and approved federally and provincially for use, MNR will give preference to such alternatives.

3.1.10 Annual Operations

Current Requirements

T&Cs 72 to 75 and the associated Appendices 16 and 17, parts of T&Cs 6 and 8(b) and the associated Appendices 2(C), 2(D), 3(C), 3(D), 3(F), 4(C), 4(D), and parts of T&Cs 45, 54 and 76 of the current EA Approval prescribe the requirements for the preparation of Annual Work Schedules, operational plans for prescribed burn projects, and project descriptions and project plans for aerial herbicide and insecticide projects.

T&C 72(a) prescribes the requirement for the preparation, review and approval of Annual Work Schedules for each forest management unit. T&C 54 requires that areas of operations, including road locations, are clearly mapped on the maps of areas of operations in an Annual Work Schedule, and are clearly identified (flagged) on the ground prior to the commencement of operations.

Part of T&C 8(b) and Appendix 3(F) prescribe the contents of public notices in the public print media for Annual Work Schedules. T&C 72(b), part of T&C 6, Appendix 2(C), and part of T&C 76 identify the recipients for direct written notices for Annual Work Schedules. Part of T&C 8(b) and Appendix 3(C) prescribe the timing and contents of public notices for Annual Work Schedules. Part of T&C 45 prescribes the requirement for public notices for Annual Work Schedules to identify locations on the forest management unit for fuelwood. T&C 75 prescribes the requirement for public notices for Annual Work Schedules to identify that scheduled operations include tree planting, and where information about tree planting jobs can be obtained. Part of T&C 8(b) and Appendix 4(C) identify the information that must be available at the time of issuance of public notices for Annual Work Schedules.

T&C 73 and Appendix 16 prescribe the content requirements for operational plans for prescribed burn projects. Part of T&C 6 and Appendix 2(D) identify the recipients for public notices for prescribed burn projects. Part of T&C 8(b) and Appendix 3(D) prescribe the timing and contents of those notices. Part of T&C 8(b) and Appendix 4(D) identify the information that must be available at the time of issuance of those notices.

T&C 74 and Appendix 17 prescribe the content requirements for project descriptions and project plans for aerial herbicide and insecticide projects. Part of T&C 6 and Appendix 2(D) identify the recipients for public notices for aerial herbicide and insecticide projects. Part of T&C 8(b) and Appendix 3(D) prescribe the timing and contents of those notices. Part of T&C 8(b) and Appendix 4(D) identify the information that must be available at the time of issuance of those notices.

T&C 6

Notification of various stages of timber management planning and operations shall be given to the appropriate persons, including interested and affected persons and organizations and the general public. The identification of those persons and organizations is provided in Appendix 2.

T&C 8

(a) Formal public consultation opportunities shall be provided at four stages in the timber management planning process for each Timber Management Plan, as set out in Conditions 9 to

12. These opportunities include an option for native communities to choose additional consultation and documentation opportunities, which is referred to in these terms and conditions as the Timber Management Native Consultation Program (i.e. Conditions 10(b)(i) and 11(b)(i) and Appendix 10). [SEE FIGURE 1]

(b) Public Notices shall be issued at each stage of the public consultation process. The timing and contents of the Public Notices are set out in Appendix 3. Details of the minimum information available at each stage of the public consultation process are set out in Appendix 4.

1

T&C 45

Timber Management Plans shall provide for maximum utilization of unmerchantable and unmarketable timber including timber left on the ground in piles or still standing following harvest operations, for fuel wood. MNR shall provide advertised notice of locations where fuel wood can be found.

2

T&C 54

MNR shall ensure that the location of access road corridors and locations, landings, water crossings, reserves, buffers, and harvest blocks, shall be accurately mapped and clearly flagged. Such flagging shall occur before the commencement of timber management operations, and shall be routinely monitored by MNR during and after these operations to ensure compliance with the flagging and other prescriptions and operational restrictions.

3

T&C 72

(a) An Annual Work Schedule shall be prepared for each forest management unit before any operations may proceed. All activities identified in an Annual Work Schedule (and any subsequent revisions to an Annual Work Schedule), must be previously approved in a Timber Management Plan, a Timber Management Plan amendment, or a program for insect pest management before they are scheduled for implementation in the Annual Work Schedule. A District review of the Annual Work Schedule (and any subsequent revisions to the Annual Work Schedule) shall be undertaken, and the Local Citizens Committee shall be provided the opportunity to inspect the Annual Work Schedule prior to its approval by the district manager.

(b) Upon approval of the Annual Work Schedule, a Notice of Annual Work Schedule Inspection shall be issued. Requirements for service of this notice are set out in Appendix 2, part C. The timing and contents of this notice are set out in Appendix 3, part C. Details of the minimum information available at the time of issuance of this notice are set out in Appendix 4, part C.

4

T&C 73

Each prescribed burn which is undertaken for timber management purposes shall be the subject of an operational plan. Particulars of this condition are set out in Appendix 16.

5

T&C 74

Each project involving the aerial application of a herbicide or insecticide which is undertaken for timber management purposes shall be the subject of a project description and a project plan. Particulars of this condition are set out in Appendix 17.

6

T&C 75

MNR shall ensure that tree planting jobs in the Area of the Undertaking are advertised in Northern Ontario first so that Northern residents, particularly Aboriginals and students, will be considered for employment.

7

1

T&C 76

MNR shall provide in the Code of Practice for Timber Management Operations in Riparian Areas, that operators ensure that trails used for accessing and working traplines, and portage routes used for recreational purposes be rehabilitated and unobstructed following timber operations. MNR and operators shall consult with affected trappers and recreationists prior to operations in order to identify such trails and portages.

2

Appendix 2: Public Notice Requirements: Service

Service Of Notice With Respect To Timber Management Planning

C: Notices for Annual Work Schedules:

1. *Public notice for each Annual Work Schedule (and any subsequent revisions to an Annual Work Schedule) shall include direct written notice from the MNR district manager to those persons who have identified themselves as having an interest in, or who are known to be directly affected by, the operations scheduled in the Annual Work Schedule.*
2. *Reasonable efforts shall be made to identify persons who may be directly affected by timber management operations during the term of the Annual Work Schedule, and in particular those persons who have requested notice of specific activities occurring in specific areas. Without limiting the generality of the foregoing, reasonable efforts shall include contacting Band Councils and native communities in or adjacent to the forest management unit, and consulting records of registered trapline areas and mining activity.*
3. *(a) Direct verbal communication of the required information, with whatever modifications are necessary, may serve as an additional form of notification, where appropriate.*
   (b) The provisions of The French Language Services Act, 1986, *as amended from time to time, shall govern the translation of Notices into the French language.*
   (c) Notices to Band Councils and native communities and organizations will be provided in English and the appropriate native languages, unless the specific Band Council, native community or organization advises that notice in native languages is not necessary.
4. *(a) Public notice requirements shall also include general public notices in the form of advertisements in the local media, including publications in the native media.*
   (b) Where such notices are published in print media, the contents of the notices shall conform with the requirements set out in Appendix 3, part F.

D: Notices for Prescribed Burns and Notices for Aerial Applications of Herbicides and Insecticides:

1. *Notices associated with prescribed burns and aerial applications of hebicides and insecticides shall be served upon the same persons and organizations, and by the same methods, as those for Annual Work Schedules, with whatever modifications are necessary in the circumstances*

3

Appendix 3: Public Notice Requirements: Timing And Notice Contents

C: Notices for Annual Work Schedules:

1. *The Notice of Annual Work Schedule Inspection shall be issued at least 15 days before operations are scheduled to commence, and shall contain:*
   (a) a statement that the approved Annual Work Schedule is available for inspection at the district office, and that the Annual Work Schedule (and any subsequent revisions to the Annual Work Schedule) shall be available throughout the 12 months covered by the schedule;
   (b) a map of the forest management unit for which the Annual Work Schedule will be prepared, containing sufficient detail to allow for identification of the forest management unit;
   (c) a brief description of the timber management activities to be carried out that year, with

particular mention of any specific projects which involve prescribed burns or aerial applications of herbicides or insecticides;a statement that a mapped summary of the operations which are scheduled is available on request from the district office; and

(d) the names of appropriate contact people.

D. Notices for Prescribed Burns and Notices for Applications of Pesticides:

1. (a) For each project involving the aerial application of herbicides or insecticides, a public notice shall be issued at least 30 days prior to the anticipated date of application. The contents of the notice shall be similar to those used for Annual Work Schedules, with whatever modifications are necessary in the circumstances. For projects involving the aerial application of insecticides, the Notice of Insect Pest Management Program Inspection may serve as this notice of operations.

(b) For each project involving the aerial application of herbicides or insecticides, an additional public notice shall be issued at least 7 days prior to the anticipated date of application.

(c) In addition, all pesticide spray blocks on Crown Land shall be posted not more than 7 days before operations commence at all reasonable points of access and at known locations within or adjacent to the spray block where water is obtained for human consumption. Signs shall remain in place for at least 30 days after the completion of the project, and shall clearly advise the public of the specific product or formulation used in that operation. Signs shall be provided in English, French and Ojicree. Signs shall indicate the date spraying occurs, the chemical used, the date when affected berries can again be consumed and the telephone number of a ministry contact person who can provide more information.

2. For each project involving a prescribed burn, a public notice shall be issued not more than 30 days before the anticipated date of the project. The contents of the notice shall be similar to those used for Annual Work Schedules, with whatever modifications are necessary in the circumstances.

F: Notices for Annual Work Schedules:

1. Notices published in public print media for Annual Work Schedules shall normally contain the following information, in concise non-technical language:

(a) a statement that the approved Annual Work Schedule is available for inspection at the district office throughout the 12 months covered by the schedule;

(b) a map of the forest management unit that will allow the public to identify its location relative to adjacent management units;

(c) a brief description of the timber management activities to be carried out that year;

(d) a statement that a mapped summary of the operations which are scheduled is available on request from the district office; and

(e) the names of appropriate contact people.

1

Appendix 4: Information Available For Public Consultation

information Available With Respect To Timber Management Planning

C: Annual Work Schedules:

1. At the time of issuance of the Notice of Annual Work Schedule Inspection, the following information shall be available:

(a) The approved Annual Work Schedule, including any completed project descriptions and project plans for aerial applications of herbicides and insecticides and operational plans for prescribed burns, and

(b) a mapped summary of the operations which are scheduled during the 12 months covered by the Annual Work Schedule.

D. Prescribed Burns and Aerial Applications of Herbicides and Insecticides:

1. *At the time of issuance of the first public notice of an aerial herbicide or insecticide project (described in Appendix 3, part D, section 1(a)), the project description and project plan for the project shall be available.*
2. *At the time of issuance of the second public notice of an aerial herbicide or insecticides project (described in Appendix 3, part D, section 1(b)), the project description and project plan for the project, and the project approval from the Ministry of Environment and Energy (*The Pesticides Act*, Form 5), shall be available.*
3. *At the time of issuance of the public notice for a prescribed burn (described in Appendix 3, part D, section 2), the operational plan for the project shall be available.*

1

Appendix 16: Prescribed Burns

1. *For each prescribed burn, an operational plan shall be prepared in accordance with the procedures set out in the Prescribed Burn Planning Manual, as amended from time to time, and will include:*
   - *(a) the description of the methods which will be used to notify the public (i.e. a communications plan). Minimum requirements for service of this Notice are listed in Appendix 2, part D. The timing and contents of the Public Notice are listed in Appendix 3, part D. Details of the minimum information available are listed in Appendix 4, part D, section 3;*
   - *(b) clear statements of the objectives to be achieved;*
   - *(c) a prescription described in forest fire danger rating terms of the weather and fuel conditions which will result in the necessary fuel reduction in order to achieve the objectives;*
   - *(d) a list of all Areas of Concern within or near the prescribed burn area, and an analysis of the potential positive and negative effects of the prescribed burn on timber and non-timber values; and*
   - *(e) a description of the ignition, suppression, safety and support activities which will be required.*
2. *The operational plan shall be the subject of an MNR internal review by the District and Region. The Local Citizens Committee shall be provided the opportunity to inspect the prescribed burn operational plan prior to its approval by the district manager and the regional director.*
3. *Upon completion, the operational plan for each approved prescribed burn shall be appended to the Annual Work Schedule which is available for public inspection.*
4. *A post-burn report shall be prepared and will include:*
   - *(a) an assessment of the success of the burn in achieving the objectives; and*
   - *(b) documentation of the observable positive and negative effects of the burn, including those related to the Areas of Concern identified in the operational plan.*
5. *Operational plans and post-burn reports shall be retained at the district office and will be available for public inspection.*

2

Appendix 17: Aerial Herbicide And Insecticide Projects

1. *A project description shall be prepared for each aerial application of a herbicide or insecticide, and will include:*
   - *(a) a statement of the objectives to be achieved;*
   - *(b) a forest description;*
   - *(c) the technical name and formulation of the pesticide;*
   - *(d) the type of aircraft to be used (i.e. rotary or fixed wing);*
   - *(e) the name of the project supervisor;*
   - *(f) the locations of the treatment areas, identified on maps;*
   - *(g) the proposed timing of the activity; and*
   - *(h) a description of the results of the application of the MNR/MOEE Buffer Zones and their display on maps.*
2. *Upon completion, the project description for each aerial application of a herbicide or insecticide shall be appended to the Annual Work Schedule which is available for public inspection.*
3. *A project plan shall be prepared for each aerial application of a herbicide or insecticide will be prepared and will include:*
   - *(a) the description of the methods which will be used to notify the public (i.e. a communications*

plan). Minimum requirements for service of this Notice are listed in Appendix 2, part D. The timing and contents of the Public Notice are listed in Appendix 3, part D. Details of the minimum information available are listed in Appendix 4, part D, sections 1 and 2;

(b) an operations plan;
(c) a safety plan; and
(d) a security plan.

4. A post-operations report shall be prepared and retained at the district office, and will be available for public inspection.

Implementation Experience

Annual Work Schedules

Since the EA Approval in 1994, Annual Work Schedules have been prepared to implement each FMP in effect. On occasion, an annual work schedule was not prepared in the event that forest operations were not scheduled for a particular year.

The role of an annual work schedule has evolved during the past eight years. In addition to implementing the FMP, the Annual Work Schedule has also become the mechanism for review and approval of a variety of items such as compliance plans, fire prevention plans and the proposals for water crossing structures that were previously provided outside of the FMP and annual work schedule processes. The locations of scheduled operations are identified in the field by flagging, by relying on existing natural or man-made boundaries, or by using global positioning systems.

The process for approving operational details for water crossings has changed since the EA Approval. Previously, individual water crossings were administered through work permit applications under the *Public Lands Act* (1990). With the implementation of the *Crown Forest Sustainability Act*, the review and approval of forest access road water crossings have been integrated into the FMP and the annual work schedule processes. More recently, the roles of MNR and the federal Department of Fisheries and Oceans have evolved and are being reviewed with regard to responsibilities for identification and protection of fish habitat under the federal *Fisheries Act*.

Silvicultural Operations of Special Interest to the Public

Where prescribed burns and aerial application of herbicides and insecticides were undertaken, operational plans were prepared in accordance with the requirements of the EA Approval. Project and operational plans for prescribed burns and aerial herbicide and insecticide operations have proven to be an effective approach to plan for these events with full public participation. Implementation manuals such as the Prescribed Burn Planning Manual (MNR 1997a) have provided the necessary guidance for planning and implementing these operations.

Analysis of Implementation Experience

Annual Work Schedules

Annual Work Schedules have been an effective mechanism for the implementation of forest management plans, and it is recommended they be retained. MNR is recommending additional requirements for Annual Work Schedules, including the identification of 100 meter locations for all forest access road water crossings. Flagging is one of several methods that can be used to identify the location of scheduled operations.

In addition, MNR is recommending a change to integrate the review and approval process for forest access road water crossings into Annual Work Schedules. This change addresses the evolving roles for MNR, the federal Department of Fisheries and Oceans and the forest industry, with respect to the application of the federal *Fisheries Act*. These improvements to the planning process will provide both efficiencies and enhancements for the protection of fish habitat.

Silvicultural Operations of Special Interest to the Public

MNR is recommending that the additional operational planning provisions for prescribed burning, aerial herbicide and insecticide application be retained due to their complex nature and the level of public interest shown in these operations.

MNR proposes to consolidate the requirements of T&Cs 72 to 75 and the associated Appendices 16 and 17, parts of T&Cs 6 and 8(b) and the associated Appendices 2(C), 2(D), 3(C), 3(D), 3(F), 4(C), 4(D), and parts of T&Cs 45, 54 and 76 into a single new consolidated term and condition which sets out the requirements for the preparation of Annual Work Schedules, operational plans for prescribed burn projects, and project descriptions and project plans for aerial herbicide and insecticide projects. This consolidated term and condition includes changes to the current requirements for Annual Work Schedules in T&C 72 to add requirements for planning of 100 metre-wide locations for all forest access road water crossings.

Recommended Term and Condition

MNR recommends that T&Cs 72 to 75 and the associated Appendices 16 and 17, parts of T&Cs 6 and 8(b) and the associated Appendices 2(C), 2(D), 3(C), 3(D), 3(F), 4(C), 4(D), and parts of T&Cs 45, 54 and 76 be deleted and replaced with the following:

25. The Forest Management Planning Manual shall describe planning provisions for the preparation of an Annual Work Schedule, including the following:
  - **(a) An Annual Work Schedule shall be prepared and approved for each management unit before any operations may proceed. The Annual Work Schedule shall be prepared in accordance with the Forest Management Planning Manual**
  - **(b) All areas scheduled for access, harvest, renewal and maintenance operations during the year shall be clearly mapped in the Annual Work Schedule.**
  - **(c) In approving the Annual Work Schedule, MNR shall approve all water crossings to be constructed during the term of the Annual Work Schedule, based on the information provided in accordance with access planning requirements of this EA Approval (Terms and Conditions 12, 13 and 14).**
  - **(d) To allow for adequate review, each Annual Work Schedule shall normally contain proposed locations, structures and conditions on construction for water crossings expected to be scheduled for construction during the term of the following Annual Work Schedule.**
  - **(e) For each prescribed burn project planned during the term of an Annual Work Schedule, an operational plan shall be prepared in accordance with the requirements for prescribed burn planning as described in the Forest Operations and Silviculture Manual, and shall be appended to the Annual Work Schedule upon MNR approval.**

(f) For each aerial herbicide and insecticide project planned during the term of an Annual Work Schedule, a project description and a project plan shall be prepared in accordance with the requirements for aerial herbicide and insecticide planning as described in the Forest Operations and Silvicultural Manual. The project description and project plan shall be appended to the Annual Work Schedule upon MNR approval.

(g) The Annual Work Schedule shall be reviewed by MNR district staff and approved by the MNR District Manager. The Local Citizens Committee shall be provided the opportunity to inspect the Annual Work Schedule prior to its approval. The Annual Work Schedule shall be available for public inspection after MNR approval, with public notices identifying a person who can be contacted in relation to forest operations on the management unit as well as opportunities for fuelwood and tree planting jobs.

3.1.11 Management Unit Annual Reporting

Current Requirements

T&Cs 79, 21 and 83 and the associated Appendices 8, 18, and 21 and parts of T&Cs 18, 24, and 27(c) of the current EA Approval prescribe the requirements for the preparation of Annual Reports, five-year Reports of Past Forest Operations and maintenance of central records on pesticide use.

T&C 79 and Appendix 18 prescribe the requirement for, and contents of, an Annual Report for each management unit, which reports on the forest management operations carried out during the preceding year. Part of T&C 24 requires that "disputes over visual resources that remain unresolved" be summarized in the Annual Report; and item 1(n) of Appendix 18 requires the "identification of unresolved disputes over visual resource prescriptions" in the Annual Report. Part of T&C 27(c) requires the Annual Report to include the results of the inventory and monitoring of clearcuts and exceptions to the maximum size restriction as well as configuration and contiguity; and item 1(a) of Appendix 18 requires a summary of the "average and maximum size of clearcuts" in the Annual Report.

T&C 21 and Appendix 8 prescribe the requirement for, and contents of, a Report of Past Forest Operations for each management unit, which reports on the forest management operations carried out during the five-year term of the FMP. Part of T&C 18 requires a summary map of past harvest areas for the two previous five-year terms and approved harvest areas in the current FMP.

T&C 83 and Appendix 21 require MNR to maintain central records on pesticide usage.

T&C 18

MNR shall produce a "proposed and past harvest operations map" for each forest management unit, at a scale appropriate to portray information about the locations of past, proposed and/or approved harvest operations for the two past five-year Timber Management Plans, the Plan currently in force and the proposed Plan. This map shall also show alternative road corridors for each forest management unit. This map shall be in summary form for the public to take home and will be made available at the First Information Centre.

T&C 21

(a) Each Timber Management Plan shall contain a Report of Past Forest Operations, which reports on operations carried out during the five-year term of the previous Plan. The contents of the Report of Past Forest Operations and its analysis of meeting objectives, targets and strategies are listed in Appendix 8.

(b) The Plan author shall prepare a summary that provides an analysis of past operations and the results of the independent audit. The summary will highlight problems, issues and various objectives for access, harvest, renewal and maintenance as well as the proposed strategies to achieve each objective.

Non-timber Values: Strategies, Problems and Issues:4Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber

Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:Non-timber Values: Strategies, Problems and Issues:

T&C 24

Timber Management Plans shall contain a section on Visual Resource Management where the Plan author will report the status of complaints about visual impacts and the rationale for the prescription made to address the complaint. Disputes over visual resources that remain unresolved shall be summarized in the Annual Report for the Forest Management Unit pursuant to Condition 79 and Appendix 18, section 1(n), and in the five-year State of the Forest Report pursuant to Condition 84 and Appendix 22, section 1(l).

T&C 27

(a) MNR shall implement a restriction on clearcut harvesting requiring a range of sizes of clearcuts not to exceed 260 hectares. MNR shall also develop standards for configuration and contiguity of clearcuts which will ensure that the purpose of this restriction is not frustrated.

(b) These restrictions and standards shall be incorporated into the Environmental Guidelines for Timber Management Activities specified in Condition 94(b).Silvicultural Ground Rules shall be prepared with the objective of ensuring that clearcuts are planned to a range of sizes and not consistently approach or meet the permitted maximum. Where for sound biological or silvicultural reasons individual or contiguous clearcuts exceed 260 hectares, they shall be recorded in the Plan as an exception to this condition, with reasons provided.

(c) MNR shall inventory and monitor clearcuts and exceptions to the maximum size restriction as well as configuration and contiguity. The results shall be in the Annual Report for the Forest Management Unit, in the Annual Report to the Legislature, in the five-year State of the Forest Report and in the review for the Minister of Environment and Energy pursuant to Condition 114 (a)(v).

Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:

T&C 79

For each forest management unit, an "Annual Report" shall be prepared concerning the timber management activities which were carried out during the preceding year. The contents of this report are listed in Appendix 18.

Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:Forest Management Unit Level:

T&C 83

MNR shall continue to maintain central records on annual pesticide use for timber management purposes on Crown lands in Ontario. The contents of these records are listed in Appendix 21.

Appendix 8: Report Of Past Forest Operations

1. The Report of Past Forest Operations shall contain the following information concerning implementation of operations on the forest management unit during the five-year term of the previous Timber Management Plan:
   (a) Statistical information comparing planned and actual activities for the previous five-year term including:
      (i) Area harvested;

  - *(ii) Volume harvested;*
  - *(iii) Volume losses due to natural forces categorized according to insects, disease, fire, blowdown, others;*
  - *(iv) area tended and area regenerated and the spending incurred to implement these activities by treatment method including but not limited to site preparation, planting, seeding, natural regeneration and tree improvement support.*
  - *(v) area tended and area treated for protection purposes, by treatment method including but not limited to cleaning: manual, chemical, mechanical; spacing, thinning; stand improvement);*
  - *(vi) tree improvement support;*
  - *(vii) kilometres of primary and secondary access roads constructed and maintained, signed or physically or naturally abandoned;*
  - *(viii) stand listings showing the silvicultural treatment package implemented;*
  - *(ix) annual government revenues from the FMU for stumpage and area fees;*
  - *(x) merchantable and unmerchantable timber wastage by volume and species pursuant to condition 78(b)(ii); and,*
  - *(xi) average and maximum size of clear cuts;*
- *(b) a summary of areas assessed for Free to Grow status and areas declared Free to Grow shall be provided by silvicultural treatment package and upon completion of the revision of the Silvicultural Guides pursuant to Condition 94(a) by general standard site type;*
- *(c) a summary of the area inspection reports for the management unit (prepared by MNR), including a description of the types of infractions encountered and actions taken during the term of the Plan, and recommendations for improving compliance, effects and effectiveness on the forest management unit;*
- *(d) a summary of the percentage of Maximum Allowable Depletion actually harvested, by forest unit or working group;*
- *(e) spending for maintenance and construction of primary, secondary and other roads;*
- *(f) a list of administrative, minor and major amendments, and an explanation of the reasons for the amendments;*
- *(g) a summary of audit results relating to the forest management unit;*
- *(h) conclusions on the success of meeting timber management objectives for the forest management unit;*
- *(i) conclusions on the success of meeting non-timber management objectivbes for the forest management unit.*
- *(j) a discussion of significant problems and issues arising during implementation of the Timber Management Plan for the previous five-year term. This discussion will include a description of any undesirable conditions which have been observed in the areas of operations for the previous five-year term, related to timber management activities;*
- *(k) recommendations for the development of the timber management strategies for the next five-year term to address problems and issues identified in the Report of Past Forest Operations, and*
- *(l) a statement of silvicultural effectiveness by working group and silvicultural treatment package shall be provided, and upon completion of the revision of the Silvicultural Guides pursuant to Condition 94(a) by general standard site type.*

1

Appendix 18: Annual Report (Forest Management Unit)

1. *The Annual Report shall contain the following information concerning implementation of operations on the forest management unit during the preceding year:*
   - *(a) area harvested, average and maximum size of clearcuts;*
   - *(b) volume harvested;*
   - *(c) volume losses due to natural forces categorized according to insects, disease, fire, blowdown, others;*
   - *(d) area site prepared and area regenerated, by treatment method (eg. site preparation: mechanical, chemical, prescribed burn; natural regeneration; scarification; artificial regeneration: planting container stock, planting bare root stock, seeding);*

(e) *area tended and area treated for protection purposes, by treatment method (eg. cleaning: manual, chemical, mechanical; spacing; thinning; stand improvement);*
(f) *tree improvement support;*
(g) *kilometres of primary and secondary access roads constructed, maintained, gated, signed or physically or naturally abandoned;*
(h) *areas declared Free-to-Grow by silvicultural treatment package.*
(i) *a summary of the area inspection reports for the management unit (prepared by MNR) and a summary of the monitoring (compliance, effects and effectiveness) results as determined by an analysis of the following information, when available: Silvicultural Ground Rules; survival surveys; FTG results; stocking assessments; SOAR's; compliance monitoring results; area inspection reports; SIS, SAS; and audit results.*
(j) *government revenues from stumpage and area charges;*
(k) *spending for maintenance and construction of primary, secondary and other roads; spending for regeneration, tending and protection by treatment method;*
(l) *merchantable and unmerchantable timber wastage by volume and species pursuant to condition 78(b)(ii);*
(m) *a summary of the percentage of Maximum Allowable Depletion actually harvested, by working group;*
(n) *identification of unresolved disputes over visual resource prescriptions pursuant to Condition 24;*
(o) *forecast and actual spending on tending and regeneration, pursuant to Condition 38(a).*

Appendix 21: Central Records On Annual Pesticide Use

1. *The central records on annual pesticide use for timber management purposes on Crown Lands in Ontario shall include:*
   (a) *Purpose of the application;*
   (b) *Product used and amount used;*
   (c) *area treated;*
   (d) *type of application;*
   (e) *known incidents during the application; and*
   (f) *a record of health and other reported complaints associated with chemical spraying from workers and the public.*

Implementation Experience

Management Unit Annual Reports

Management Unit Annual Reports have been produced for each management unit in accordance with the requirements of the EA Approval and the FMP Manual. These reports provide data and information that has been summarized in the preparation of the management unit Report of Past Forest Operations, the provincial Annual Report on Forest Management and the State of the Forest Report.

During the initial stages of developing management unit annual reporting program many practitioners experienced some difficulty in preparing annual reports while at the same time addressing new requirements for preparing and implementing Annual Work Schedules and forest management plans.

Independent forest audits have identified implementation of management unit annual reporting as an area for improvement and have raised concerns such as consistency, completeness and timeliness of submissions.

Annual information on pesticide usage is collected separately from the Management Unit Annual Report, and has been maintained in central records.

Report of Past Forest Operations

The Report of Past Forest Operations has been produced in accordance with the requirements of the EA Approval and the FMP Manual for each management unit. The conclusions and recommendations contained in the Report of Past Forest Operations have been used in the development of the next forest management plan.

There have been difficulties finalizing many Reports of Past Forest Operations because of overlapping planning and reporting workloads (e.g., annual work schedule, annual report, and forest management planning process). Practitioners have indicated a need to streamline reporting requirements.

The Report of Past Forest Operations contains additional information on plan implementation that is not presently required in Management Unit Annual Reports. This additional information is used during the preparation of the next FMP and for independent forest audits.

Analysis of Implementation Experience

Reporting on forest management activities on a regular basis at the management unit level continues to be important to provide basic information regarding the implementation of forest management plans. Management Unit level information will continue to be used to track the implementation of forest management plans and to contribute to provincial level reporting.

In order to improve the quality and reduce duplication of effort, MNR is recommending to enhance management unit annual reporting by providing for cumulative reporting and periodic analysis of the progress of FMP implementation for use in forest management planning. This recommendation also supports the new ten-year plan period by providing a mechanism for continuous improvement. Enhanced Management Unit Annual Reports will replace the previous Annual Report and the Report of Past Forest Operations.

The Year Three, Year Seven and Year Ten Annual Reports will be enhanced reports that will track the progress on plan implementation and incorporate specific requirements that previously were part of the Report of Past Forest Operations. MNR is also proposing that the Year Three Annual Report also serves as the mid-plan review which will make recommendations on the planning of operations for the second five year term. The Year Seven and Year Ten Management Unit Annual Reports provide background information for the preparation of upcoming FMPs.

MNR is recommending that records on pesticide usage be appended to Management Unit Annual Reports to facilitate the maintenance of central records.

MNR proposes to consolidate the requirements of T&Cs 21, 79 and 83 and Appendices 8, 18 and 21 and parts of T&Cs 18, 24, and 27(c) into a single new term and condition which sets out the requirements for Management Unit Annual Reports for each management unit.

Recommended Term and Condition

MNR recommends that T&Cs 21, 79 and 83 and Appendices 8, 18 and 21 and parts of T&Cs 18, 24, and 27(c) be deleted and replaced with the following:

26. The Forest Management Planning Manual shall describe provisions for the preparation of Management Unit Annual Reports, including provisions for the use of text, tables and maps, and shall include the following:

(a) Each year, a Management Unit Annual Report shall be prepared and certified by a Registered Professional Forester to report on the implementation of forest management operations during the preceding year. Each Management Unit Annual Report shall include a discussion of the progress to date in meeting the planned level of activity described in the Forest Management Plan. It shall also include a discussion of any significant events affecting the implementation of the Forest Management Plan. At the time of submission of the Management Unit Annual Report, records of pesticides used for forest management purposes in the current year, shall also be submitted.

(b) In addition to these reporting requirements, the Management Unit Annual Reports for Years Three, Seven and Ten shall provide further information as described in (c), (d), and (e) of this term and condition.

(c) The Year Three Management Unit Annual Report shall serve as the mid-plan review by describing progress in plan implementation and specifically addressing the determination of whether the long-term management direction remains valid for the second five-year operational term.

(i) If valid, the report shall recommend that planning for the second five-year operation term proceed, or

(ii) If substantially valid, but requiring minor adjustments to the long-term management direction, the report shall recommend that planning proceed for the second five-year operational term with appropriate modifications, or

(iii) If not valid, the report shall recommend that an unscheduled plan renewal occur.

(iv) The MNR Regional Director shall endorse the Year Three Management Unit Annual Report following a review that ensures the recommendations are acceptable for implementation.

(d) The Year Seven Management Unit Annual Report shall serve as background information in the preparation of the upcoming Forest Management Plan and shall include preliminary information on the following items:

(i) an assessment of the achievement of the Forest Management Plan management objectives;

(ii) a review and update of the assumptions used to prepare the previous Forest Management Plan; and

(iii) conclusions and recommendations for consideration in the preparation of the upcoming Forest Management Plan.

(e) The Year Ten Management Unit Annual Report shall serve as background information in upcoming planning processes and shall include final information on the following items:

(i) an assessment of the achievement of the Forest Management Plan management objectives;

(ii) a review and update of the assumptions used to prepare the previous Forest Management Plan; and

(iii) final conclusions and recommendations.

3.2 Monitoring

The EA Approval set out requirements for monitoring at the management unit and at the provincial level. These monitoring requirements included provisions for the monitoring of compliance, effects and effectiveness.

Monitoring of forest operations at the management unit level is discussed in section 3.2.1 Management Unit Monitoring and is delivered through forest operations inspections. As a result of forest operations inspections, appropriate actions are taken to investigate and enforce provincial statutes and regulations.

Provincial level monitoring is discussed in section 3.2.2 Provincial Level Monitoring as follows:

- Audit Program
- Silvicultural Effectiveness
- Wildlife Population Monitoring
- Monitoring Guideline Effectiveness

Provincial level monitoring is undertaken through the independent forest audit program, silvicultural effectiveness monitoring, wildlife population monitoring and guideline effectiveness monitoring programs.

Independent forest audits are the basis for the audit program. They are used to monitor compliance with the forest management planning process, approved FMPs, implementation manuals, and provincial policies, procedures, and legislation. The results of the independent forest audits are reported to the Legislature annually.

Monitoring for silvicultural effectiveness is conducted for each management unit. Analysis of this silvicultural effectiveness information is undertaken for each management unit and is amalgamated for management units to provide provincial level silvicultural effectiveness monitoring.

Wildlife population monitoring is designed to monitor population trends for wildlife species associated with the featured species guidelines and other wildlife species having specialized habitat requirements.

To monitor the effectiveness of provincial implementation manuals, MNR has established long-term scientific research studies that address moose habitat and life history, fish habitat, effects of forest management on resource-based tourism and effects of forest management on other wildlife.

3.2.1 Management Unit Level Monitoring

3.2.1.1 Forest Operations Inspections

Current Requirement

The EA Approval contains two terms and conditions - 78 and 88 - that deal with the monitoring of timber management activities, and the investigation and enforcement of provincial statutes and regulations. T&C 78 requires MNR to monitor access, harvest, renewal and maintenance operations for compliance with approved plans and any other conditions imposed on operations by legislation or policy. When monitoring, T&C 78 also requires MNR to look for any undesirable conditions related to timber management activities, to document the results of inspections, and to have the records available for public inspection. T&C 88 requires MNR to prepare a handbook to guide field officers in the investigation and prosecution of offences under statutes related to timber management activities.

In addition to compliance, T&C 78 requires MNR's monitoring to look at the effects and the effectiveness of timber management. Effects monitoring is used to determine how a particular timber management activity or silvicultural treatment affects the environment. Road construction and water crossings, for example, are activities that are monitored for their effects on water quality and fish habitat. Effects monitoring is done through scientific studies that survey and record the effects of certain operations on the ecosystem. The results of these studies increase knowledge and understanding, which is then incorporated into the provincial forest management guidelines. Scientific studies are discussed in detail in Section 3.5.4, Scientific Research and Technical Developments.

Effectiveness monitoring is used to determine if management activities are producing the desired results. Silvicultural effectiveness monitoring involves data collection, recording, trend analysis, reporting, and the examination of reasons behind emerging trends. Ontario's efforts in effectiveness monitoring are summarized in Section 3.2.2.2, Silvicultural Effectiveness.

Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:Negotiations with Aboriginal Groups:

T&C 78

(a) MNR shall monitor the timber management activities of access, harvest, renewal and maintenance for effects, effectiveness and compliance with approved Timber Management Plans and any other conditions imposed on operations by legislation or policy. The area inspection program and where appropriate other means such as contract administration and project supervision, will be used by MNR to monitor compliance with:

- *(i) the approved Timber Management Plan, silvicultural ground rules, specific prescriptions for operations in "Areas of Concern," and exceptions to the silvicultural guides, and implementation manuals as provided for in Condition 55; and*
- *(ii) acceptable practices as described in implementation manuals as amended from time to time.*

(b) When monitoring timber management activities, MNR shall record any undesirable conditions which are observed in the areas of operations, and which appear to be related to timber management activities including:

(i) Incidents of road washout in Areas of Concern and their observed environmental effects;
(ii) Incidents of wastage of merchantable and unmerchantable timber specifying the amount of wastage by volume, the reason for wastage, and enforcement actions taken.
(iii) Incidents of trespasses of timber operations onto reserves

(c) For each forest management unit, area inspection reports shall document:
(i) The location of the inspection;
(ii) Details of the inspection including the date, identity of the inspector, type of activity inspected, purpose and method of inspection;
(iii) Results of the inspection, including any details of non-compliance, and a description of the observed undesirable conditions (as described in Condition 78(b)); and
(iv) Required actions and actions taken, where appropriate.

(d) Area inspection reports for each forest management unit shall be retained at the appropriate district office and will be available for public inspection until at least one year after the expiry of a Timber Management Plan for the unit.

T&C 88

Within one year of approval of the amendments to the Crown Timber Act submitted by MNR, MNR shall prepare a handbook to provide guidance to its field officers for the investigation and prosecution of offenses under the Crown Timber Act, Public Lands Act, the Lakes and Rivers Improvement Act, Endangered Species Act and other statutes relevant to timber management activities. In particular, MNR shall ensure that timber-related statutes and regulations are interpreted consistently, supervised adequately, and enforced fairly but firmly in all cases of non-compliance.

Implementation Experience

The MNR's approach to monitoring has evolved since the time of the public hearings and the EA Board decision. Prior to the enactment of the *Crown Forest Sustainability Act*, an interdisciplinary team of MNR and forest industry staff undertook the development of a comprehensive compliance inspection program. This joint working group developed an approach to inspection reporting that required the preparation of a Forest Operation Inspection Report. MNR included the requirement to complete the report in a Policy and Procedure Directive in the Forest Compliance Handbook (MNR 2000a), and made it an integral part of the Guideline for Forest Industry Compliance Planning (MNR 2001c). The Forest Operation Inspection Report format was designed to incorporate all of the requirements for compliance inspection information required by T&C 78(b-d).

Using this approach, monitoring responsibilities are shared between MNR and the forest industry. The industry plays the lead role in monitoring operations and reports its findings to MNR. In addition, the industry must prepare five-year compliance strategies and annual compliance plans and must undertake training to ensure it has a trained and competent workforce. As the regulatory agency, MNR carries out compliance spot checks and audit inspections of industry operations, including checks of every industry report of non-compliance. It is the MNR's responsibility to initiate remedial and enforcement action where violations occur. MNR also prepares its own five-year compliance strategies and annual compliance plans, and partners with the forest industry in compliance training initiatives.

Effective April 1, 1998 it became mandatory for all MNR districts to prepare and submit electronic compliance inspection reports of forest operations using the Forest Operations Compliance Information System software (MNR 2001d). The forest industry was also provided with the Forest Operations Compliance Information System software program at the same time. Forest Operations Compliance Information System was designed as a standard, comprehensive monitoring and electronic recording form for compliance reporting by both industry and MNR, which allows for data analysis and the monitoring of compliance trends. Most Sustainable Forest Licence holders voluntarily used Forest Operations Compliance Information System as a method of recording and submitting inspection reports to MNR, even before the Forest Information Manual made electronic reporting mandatory.

T&C 78(a) requires that MNR monitor access, harvest, renewal and maintenance activities for their effects, effectiveness and compliance with approved timber management plans, and with any other conditions imposed by legislation or policy. The MNR Forest Operations Compliance Program fully meets these requirements as they pertain to operations compliance. The approach used is outlined in the MNR's Forest Compliance Strategy (MNR 1996b), and the detailed policies, procedures and approaches are described in the Forest Compliance Handbook. The Forest Operations Compliance Program does not, however, address T&C 78(a) requirements to monitor for effects and effectiveness; these are addressed through silvicultural effectiveness monitoring and scientific studies and research, as described in Sections 3.2.2.2 and 3.5.4 of this Timber Class EA Review.

T&C 78(b) also requires MNR to record any undesirable conditions related to timber management activities observed in the area of operations, including road washouts in Areas of Concern, wastage of timber, and trespasses into reserves. All road washouts, not just those found in Areas of Concern, are recorded as a separate category. Wasteful practices, as defined in the Scaling Manual (MNR 1995a), and any incidents of unauthorized harvesting are recorded as non-compliance and reported in Forest Operations Compliance Information System.

MNR has found it problematic to record and track the amount of wasteful practice by volume, especially where the nature of the waste is breakage or damage. Instead, information on wasteful practice is captured in inspection reports as a reportable incident of non-compliance, including the reason for non-compliance. Where specific volumes are known, these are recorded in the Forest Operations Compliance Information System.

T&C 78(c) requires MNR to document the location of inspections, the details of each inspection and the actions proposed or taken as a result of the inspection. The Forest Operations Compliance Information System software has mandatory fields for location, licence and approval number, the inspector's name, date, the type of activity inspected and method of inspection, and the purpose of the inspection. The results of the inspection, including any details of non-compliance and any actions taken, can be recorded in the Forest Operations Compliance Information System.

T&C 78(d) requires that MNR retain compliance inspection reports at the district office and make them available to the public. All inspection reports, whether completed by the MNR or by the forest industry, are available for the prescribed retention period in each MNR district or area office for the purpose of public inspection. A provincial summary of compliance inspections is also included in MNR's Annual Report on Forest Management and the State of the Forest Report, 2001. The Forest Compliance Handbook was prepared to meet the requirements of T&C 78 and 88 and included direction for the specified legislation (i.e., *Crown Timber Act*, *Public Lands Act*, the *Lakes and Rivers Improvement Act* (1990), and the *Endangered Species Act* (1990)) and other statutes relevant to timber management activities. It was approved and released for use in 1996, within the one-year timeframe specified by T&C 88. An extensive training program for MNR's compliance and enforcement staff supported the manual's release and continues today.

Analysis of Implementation Experience

MNR's implementation experience has shown the area inspections governed by the Forest Compliance Handbook and the Forest Operations Compliance Information System to be effective in monitoring forest management activities in accordance with T&C 78. In its decision, the EA Board recognized the evolutionary nature of monitoring at the time, and this has been the MNR experience also. It is the MNR's intention to revise and update the Forest Compliance Handbook as new technologies and better monitoring methods become known.

MNR is continuing to develop new information systems to support the compliance program. Today, the Forest Operations Compliance Information System information is used in the preparation of management unit annual reports on forest compliance and the provincial Annual Report on Forest Management. It is also used as input to annual compliance plans of the forest industry and MNR, for ongoing program analysis and evaluation, and in responding to various information requests.

MNR has designed and implemented a comprehensive forest operations compliance program in conjunction with the forest industry. MNR is committed to the continual improvement of the program, as demonstrated by the program review in 1999 and ongoing review efforts.

The level of compliance inspection and reporting has increased over time. Prior to 1998/99, the number of inspections was less than 5000. By 2000/01 the number of inspections had risen to 8000.

In the fall of 2001, MNR introduced certification into the compliance inspection program. MNR, in conjunction with the forest industry, will continue with a series of training courses for compliance inspectors, whereby staff will receive certification, if the standards are met. Certification is mandatory for MNR inspectors and voluntary for industry inspectors, however most are choosing to be certified.

MNR recommends that forest management activities continue to be monitored in accordance with a forest compliance implementation manual and that monitoring results be made available to the public.

A review and update of the Forest Compliance Handbook was undertaken in 1999 and released in March 2000. Since the Forest Compliance Handbook has been developed in accordance with T&C 88, a term and condition is no longer required.

T&C 78(a) requirements to monitor for effects and effectiveness will continue to be addressed through silvicultural effectiveness monitoring and scientific studies and research, as described in Sections 3.2.2.2 and 3.5.4 of this Timber Class EA Review.

MNR recommends that T&C 78(b-d) be amended.

Recommended Term and Condition

MNR recommends that T&Cs 78 and 88 be deleted and replaced with the following:

27. (a) MNR shall ensure that monitoring of the forest management activities of access, harvest, renewal and maintenance will take place through a forest operations

inspection program. Monitoring will consist of compliance with approved Forest Management Plans and any other conditions imposed on operations by legislation or policy.

(b) MNR shall deliver consistent, fair and firm enforcement of forest-related statutes and regulations.

(c) MNR shall maintain a forest compliance handbook that will describe the details regarding a forest operations inspection program including scope, documentation and record retention.

(d) Results of the forest operations inspection monitoring program shall be available for public inspection until at least one year after the expiry of a forest management plan for the management unit.

3.2.2 Provincial Level Monitoring

3.2.2.1 Audit Program

Auditing is a fundamental component of monitoring. Audits periodically examine operations and records for the purpose of substantiating that the objectives of management activities are being achieved, that technical standards are being met, and that policies are being followed.

Current Requirement

The EA Approval categorized three T&Cs - 85, 86, and 87 - under the subheading 'Audit'. Audit T&Cs require MNR to address operational compliance with the forest management planning process, and with approved FMPs, relevant implementation manuals, policies, obligations, procedures, and legislation. These audits were also to assess the effectiveness of timber management activities in achieving management objectives.

T&C 86 required MNR to conduct independent audits of each Forest Management Agreement area every five years, and to report the results to the Legislature. The requirements for these audits are outlined in T&C 86 and Appendix 25 and also required that six Crown and company management units be audited annually, beginning with those units with the greatest volume of wood harvested.

T&C 87 required the continuation of reviews on forest management operations conducted by forest industry under Forest Management Agreement. These reviews were also to continue to report to the Legislature with recommendations on the extension of specific Forest Management Agreements. T&C 85 required related internal audits for operational programs delivered by MNR.

T&C 85

MNR shall undertake interdisciplinary internal operational audits with respect to compliance with the timber management planning process, approved Timber Management Plans, implementation manuals, and relevant provincial policies, obligations, procedures and legislation. The audit shall include an assessment of the availability of inventory information with respect to timber and non-timber values for the forest management unit for use in timber management planning, with recommendations concerning any data collection priorities that should be addressed. In addition, the audits shall assess the effectiveness of timber management activities in achieving timber management objectives and in providing assistance in meeting non-timber objectives.

T&C 86

(a) MNR shall undertake operational audits, through the appointment of suitably qualified independent audit teams, which will include an assessment of compliance with the timber management planning process, approved Timber Management Plans, implementation manuals, and provincial policies, procedures, and legislation. At least one member of the Audit team shall be a Registered Professional Forester. Terms of reference for these audits are set out in Appendix 25.

(b) The audits shall assess the effectiveness of timber management activities in achieving management objectives. These audits will include any assessments of silvicultural effectiveness.

(c) MNR shall design a set of procedures and guidelines for the undertaking of these audits. These procedures and guidelines shall be designed to empower an appointed audit team to act as an independent body. The guidelines and procedures will also be constructed to meet the

requirements of Section 6 of the Crown Timber Act, R.S.O. 1990, c. C.51, as amended, in order that the Minister of Natural Resources may report to the Legislature.

(d) MNR shall provide remuneration and expenses for each audit team. MNR shall provide funding for the preparation and publication of the audit report by each appointed audit team.

(e) Each Forest Management Agreement in the province shall be audited every five years. In addition, six Crown and Company Management Units shall be audited each year, starting with those units with the greatest volume of wood harvested. The audit shall examine the activities over the past five-year period beginning at a point in time which will allow comparison of three years of the previous Timber Management Plans and two years of the current Plan.

(f) Audit reports shall be published by the audit team no later than four months after the initiation of the audit.

(g) The independent audit teams shall provide an opportunity to the Local Citizens Committee for the forest management unit which is the subject of the audit to comment on management practices and to provide any other relevant information.

1

T&C 87

MNR shall continue to review and report upon the performance of Forest Management Agreement holders, in accordance with the requirements of the Crown Timber Act, R.S.O. 1990, c. C.51, in order to provide a recommendation to the Legislature on the extension of specific Forest Management Agreements.

2

Appendix 25: Independent Audits: Terms Of Reference

1. The five-year audits of forest management units shall:

(a) undertake a fair and objective review of five years of timber management activities for each forest management unit, namely:

- *(i) the preparation and approval of Timber Management Plans and the preparation and approval of annual work schedules within the timeframes specified and in accordance with this approval and the Timber Management Planning Manual*
- *(ii) the achievement or progress towards the achievement of timber management objectives and targets for the forest management unit (planned versus actual)*
- *(iii) the achievement or progress towards the achievement of the timber components of other resource programs (planned versus actual)*
- *(iv) the conducting of timber management activities in accordance with the approved Plans or amendments to those Plans*
- *(v) the preparation and submission of accurate annual reports as specified in the TMPM.*

(b) Examine the depletion records, silvicultural records, maps of cutover areas classed non-treatable and the road construction maps for the forest management unit with regard to their adequacy and their conformity with the records.

(c) Select and inspect harvest cuts, silvicultural projects and road construction projects which are typical of the techniques employed on the forest management unit for conformity with the approved Timber Management Plan and the field application of implementation manuals and silvicultural ground rules.

(d) Examine and report upon the relationship between the harvest and forest regeneration that has occurred on the forest management unit during the period of the review.

(e) Determine, for forest management audits managed under forest management agreements, whether the obligations of the FMA holder have been satisfactorily performed and recommend to the Minister of Natural Resources whether the remaining period of the agreement should be extended for a further term of five years.

(f) The independent auditors, in addition to the above, can investigate any matters they feel appropriate.

(g) The independent auditors will highlight, in their written report, any problems, bad practices or negative results observed, and their recommended solutions.

Implementation Experience

The new business relationship between MNR and the forest industry and the enactment of the *Crown Forest Sustainability Act* in 1995 resulted in a transition from Forest Management Agreements to Sustainable Forest Licences and in the transfer of operational aspects of forest management to Sustainable Forest Licences. Many Crown and company management units were also converted to Sustainable Forest Licences over time.

The consulting firm of Ernst & Young designed the original Independent Forest Audit Process and Protocol (MNR 2000b) in 1995, under contract to MNR. The Independent Forest Audit Process and Protocol was prepared in response to T&Cs 86 and 87, and *Crown Forest Sustainability Act* requirements. The Independent Forest Audit Process and Protocol outlines comprehensive criteria and procedures for auditing, and is much broader in scope than the requirements of T&Cs 85, 86 and 87 combined.

Audit teams are required to be independent and interdisciplinary. The Independent Forest Audit Process and Protocol includes an assessment of compliance with the forest management planning process, approved FMPs, implementation manuals, and provincial policies, procedures, and legislation. It requires the auditor to examine the effectiveness in achieving management objectives, to examine the effectiveness of monitoring programs, including silvicultural effectiveness, and to consider and comment on the status of both timber and non-timber information on the management unit.

T&C 86(d) requires MNR to fund these audits. In 1996 MNR paid for the Independent Forest Audits from its base program budget, but the Forestry Futures Trust, whose funds are generated from Crown charges, has paid for audit work since then. At the same time, the Forestry Futures Trust Committee has played a valuable role in contract administration by ensuring that auditors have met their contractual obligations. In 1998 the role of the Forestry Futures Trust Committee expanded further to include the selection of audit firms.

Term and condition 86(e) states that every forest management agreement in the province shall be audited every five years and that six Crown and company management units shall be audited each year, beginning with the units with the greatest volume of wood harvested. Given the number of management units, the EA Board estimated that it would take approximately ten years to audit them all. This requirement has been exceeded. By the end of 2001, all management units in the province had been audited at least once, and five had been audited twice. Where possible, the MNR has timed audits to coincide with the scheduling requirements of T&C 86(e) with adjustments necessary in the circumstances to address the increased level of auditing, timing precedents set by previous Forest Management Agreement reviews and management unit amalgamations.

The Minister of Natural Resources tables all audit reports in the Legislature. The four-month timeframe for publishing the audit reports, as required by T&C 86(f) has proven to be a challenge. The broad scope and comprehensive nature of the Independent Forest Audit Process and Protocol, the large number of people involved in the preparation and review of audit reports, and the additional time necessary to meet MNR's requirement to develop action plans have all made the four-month timeframe difficult to attain. The timing of publishing of audit reports has been variable, however, the majority of the reports have been published within one year of the audit. Prompt tabling in the Legislature and public distribution of audit reports is recognized as a necessary area of improvement. MNR has set a target for each year's audits to be submitted to the Minister for tabling in the Legislature, by the end of the fiscal year.

T&C 86(g) requires that the audit teams provide the Local Citizens Committees with an opportunity to comment on management practices, and to provide any other relevant information. Since 1996, Local Citizens Committees have been included in the pre-audit meeting to give them the opportunity to identify issues related to forest management practices on the management unit. Local Citizens Committees are also provided with a copy of the final audit report and associated action plan. In addition, the audit team interviews a sample of Local Citizens Committees members. Subsequent revisions to the Independent Forest Audit Process and Protocol have been made and Local Citizens Committees are provided an opportunity to have a member participate in all components of the field audit, including the opening and closing meetings, and field work where feasible.

The Independent Forest Audit Program also addresses all of the requirements of T&C 87. Independent forest audits are an evolution of Forest Management Agreement reviews. Forest Management Agreement reviews that were initiated in 1985 were continued until their replacement by the more comprehensive independent forest audits in 1996. The Independent Forest Audit Process and Protocol meets the requirements for licence reviews under the *Crown Forest Sustainability Act*, Section 26(3), which is a replacement for Section 6 of the *Crown Timber Act*. Additional information with respect to major problems identified through independent forest audits is provided in a progress report in Section 5.0.

In addition to the comprehensive nature of the independent forest audit program, and its application to all management units, MNR continued to undertake the interdisciplinary internal operational audits described in T&C 85 by way of operational reviews. These operational reviews were focused at a district level, and examined forest management planning and policy interactions with regional and main offices. MNR also conducted other program reviews such as the Forest Compliance Program Review in 1999. Collectively these audits and reviews met or exceeded the requirements of T&C 85.

Analysis of Implementation Experience

With the development of the Forest Management Business Plan in 1995, the management responsibilities of MNR and the forest industry changed considerably. The MNR role in operational forest management has been transferred to the forest industry. A comprehensive and independent forest audit program was developed by MNR to address the auditing requirements of the EA Approval, along with the new roles of MNR and the forest industry.

The Independent Forest Audit Process and Protocol exceeds the requirements of the EA Approval. For example, it includes the requirement for action plans and follow-up status reports that respond to the findings of the audit. In addition, MNR has undertaken operational reviews to examine the effectiveness of the delivery of the Forest Program at the district level, and the adequacy of support provided by regional and main offices. Operational reviews for MNR's Northeast and Northwest Regions were completed in 1999 and 2000, respectively, while Southcentral Region will be completed in 2002.

In addition to the operational reviews, MNR has also carried out other program review activities, including the Forest Compliance Program Review conducted in 1999 and various other provincial forest program reviews. These have included the Scaling and Wood Measurement audits, the Forest Resource Licensing Gaps and Needs Analysis, as well as regional reviews.

The Forest Program is also, and will continue to be, subject to internal MNR program reviews and examination by the Provincial Auditor. Information gained through the Comprehensive Review of the Independent Forest Audit in 2001 is being used to further enhance the audit program. Ongoing review within the Independent Forest Audit Program will continue to monitor and forecast changes within the provincial and national forest sectors, to allow the independent forest audit process to maintain its relevancy and currency.

The requirements of T&Cs 85, 86 and 87, and Appendix 25 have been met through the Independent Forest Audit Program. MNR proposes integration of all audit functions into one term and condition, as all of the elements required by T&Cs 85, 86 and 87 and Appendix 25 currently take place within the existing Independent Forest Audit Program.

Recommended Term and Condition

MNR recommends that T&Cs 85, 86 and 87, and Appendix 25 be deleted and replaced by the following:

28. MNR shall ensure that independent forest audits for management units are conducted in accordance with the requirements of the *Crown Forest Sustainabiltiy Act* and its regulations (Sections 26.3 and 69.1(31)). In addition, MNR shall propose a regulation under the *Crown Forest Sustainabiltiy Act* (Section 69.1(31)) governing the conduct of these audits, within one year of the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval.

3.2.2.2 Silvicultural Effectiveness

Current Requirement

The EA Approval contains one term and condition related to silvicultural effectiveness monitoring. T&C 96 requires MNR to improve its methods of assessing regeneration success, and its practices in keeping records and reporting on regeneration results. Detailed information on how MNR has met T&C 96 can be found in Section 5.0 under the progress report for T&C 96.

T&C 96

MNR shall improve its assessment, recording and reporting of silvicultural effectiveness related to both natural and artificial renewal methods, through the development of programs to address the following subject areas:

(a) The maintenance of silvicultural records of prescriptions and their results;
(b) The enhancement of record keeping methodologies in order to provide for improved tracking of the linkages among silvicultural guides, Silvicultural Ground Rules, project records, Free-to-Grow Assessments and other condition survey records, and Forest Resource Inventory updating;
(c) The enhancement of methodologies and tools for analysis of silvicultural trend data to assess the effectiveness of prescriptions; and
(d) The systematic reporting of results of renewal activities to the general public.

Implementation Experience

During the Timber Class EA hearings, MNR expressed its intent to develop a new Silvicultural Treatment Effectiveness Monitoring System to address silvicultural effectiveness. The purpose of new Silvicultural Treatment Effectiveness Monitoring System was to provide easier access to site-specific information collected over time, and to improve MNR's ability to assess and report on regeneration success and silvicultural effectiveness. MNR subsequently reassessed its new Silvicultural Treatment Effectiveness Monitoring System approach, given changes brought about by the *Crown Forest Sustainability Act* and the new business relationship with the forest industry described in Section 1.3. This reassessment resulted in a decision to address T&C 96 in a different manner than was anticipated during the Timber Class EA hearings.

The Silvicultural Effectiveness Monitoring Manual for Ontario (MNR 2001e), presents MNR's current approaches to silvicultural effectiveness monitoring. The Manual describes the components that meet T&C 96 requirements for the development of programs to improve the assessment, recording, and reporting of silvicultural effectiveness. MNR meets these requirements by addressing all aspects of silvicultural effectiveness monitoring in the manual including objective setting, standards, assessment methodology, compilation and reporting, and analysis and evaluation. The Silvicultural Effectiveness Monitoring Manual for Ontario also describes those aspects of the forest management planning process that relate to silvicultural effectiveness monitoring and explains their linkages.

MNR has met the requirements of T&C 96(a) to maintain silvicultural records of prescriptions and their results through provisions in the FMP Manual and the Forest Information Manual. The FMP Manual requires that a forest operations prescription be prepared for all harvest and renewal activities; the Forest Information Manual requires that the silvicultural records for all harvest and renewal activities include information on both the prescriptions and the results. In this way, prescriptions are linked to results, and their effectiveness can be properly assessed.

MNR has met the requirements of T&C 96(b) for enhanced record-keeping methodologies. The Silvicultural Effectiveness Monitoring Manual for Ontario describes enhanced methodologies and tools for monitoring silvicultural effectiveness. This includes methods and tools for collecting and analyzing appropriate data to assess whether a particular area has met the regeneration and management standards, and to ensure the ability to track stand development over time toward a desired future forest condition. In addition, the Forest Information Manual identifies who is responsible for collecting, storing, retrieving and transferring silvicultural effectiveness data, and provides the requirements for data transfer. Sustainable Forest Licensees are required to maintain silvicultural records, including prescriptions and results, in a retrievable and geo-referenced format. The use of geographic information systems has been key to enhancing record-keeping methods and tracking results.

MNR has met the requirements of T&C 96(c) for enhanced methodologies and tools for monitoring silvicultural effectiveness by enhancing the methodologies for conducting regeneration assessment. The Silvicultural Effectiveness Monitoring Manual for Ontario describes two regeneration assessment procedures that incorporate modern information technology to ensure efficient and effective data collection and analysis - namely, Silvicultural Treatment Assessment and Reporting System and Free Growing Regeneration Assessment. MNR has also developed forest-level tools for assessing future implications of management actions on the forest, by linking silvicultural effectiveness results to forest management planning, and through use of the Strategic Forest Management Model (MNR 1999c). Inputting actual silvicultural results into the Strategic Forest Management Model forecasting model allows forest managers to determine the effect of current silvicultural practice on future forest condition. Conversely, the silvicultural results necessary to produce a desired future forest condition can be determined by the same means.

MNR has met the requirements of T&C 96(d) for reporting the results of renewal activities to the public in two ways. Renewal results are reported at the management unit level each year in each unit's Annual Report, and will be summarized and analyzed every five years in each unit's Report of Past Forest Operations. Both reports are available to the public as part of the normal forest management planning process. Renewal results are reported at the provincial level each year in the Annual Report on Forest Management to the Legislature, and will be summarized every five years in the State of the Forest Report. Surveys will be conducted in the field in accordance with the Silvicultural Effectiveness Monitoring Manual for Ontario and records of these surveys will be kept in accordance with the Forest Information Manual. The results will be reported in accordance with the FMP Manual.

Analysis of Implementation Experience

A fundamental change since the EA Approval has been the development of a new business relationship with the forest industry, and the transfer of the delivery of most operational aspects of forest management, such as forest inventory, planning, operations, and some aspects of monitoring and reporting, to the forest industry. This development has affected how MNR has re-designed programs in response to the EA Approval requirements.

MNR decided not to create a geographic information system to be used by MNR and the forest industry, but rather to address silvicultural effectiveness through the *Crown Forest Sustainability Act's* regulated manuals.

These changes include:

- *Crown Forest Sustainability Act* requirements for forest operations prescriptions, and dedicated funding for silviculture through the Forest Renewal and Forestry Futures Trusts;
- FMP Manual requirements to address silvicultural effectiveness monitoring and reporting at the management unit level;
- Forest Information Manual requirements to provide and manage information;
- Independent Forest Audit Process and Protocol to monitor compliance with these new requirements and includes a field-based determination of effectiveness; and,
- Development of the Silviculture Effectiveness Monitoring Manual for Ontario, the Silvicultural Treatment Assessment and Reporting System and Free Growing Regeneration Assessment to support the fieldwork of resource managers and auditors.

The assessment, recording, and reporting of silvicultural effectiveness has been improved to meet the requirements of T&C 96, primarily through MNR's regulatory and legislative framework. Changes in MNR's strategic direction, and in the roles and responsibilities between the forest industry and government have led MNR to employ a different approach to monitoring silvicultural effectiveness than was anticipated during the EA hearings. The Silvicultural Effectiveness Monitoring Manual for Ontario outlines and describes MNR's approach to silvicultural effectiveness monitoring.

MNR recommends changes to T&C 96, to recognize these new circumstances.

Recommended Term and Condition

MNR recommends T&C 96 be deleted and replaced with the following:

29. MNR shall maintain a manual that provides direction for silvicultural effectiveness monitoring to support systematic reporting to the general public. That direction will include:
(a) an identification of acceptable methodologies;
(b) a description of the timing of monitoring activities; and
(c) requirements for the documentation and reporting of monitoring results.

3.2.2.3 Wildlife Population Monitoring

Current Requirement

During the EA hearings, MNR presented a ‘featured species’ approach to wildlife habitat management. The underlying assumption behind the featured species approach is that it ensures forest habitat is available for the selected or featured species as well as other species with similar needs. It also assumes that if a small number of featured species is managed for, representative of various forest conditions, the habitat requirements, and hence populations, of most species will be addressed.

At the time of the EA Approval, the provincially featured species in Ontario were moose in the boreal forest, and white-tailed deer in the Great Lakes-St. Lawrence forest, as well as those species listed as threatened or endangered with extinction.

MNR relies on the Committee on the Status of Species at Risk in Ontario and on the Committee on the Status of Endangered Wildlife in Canada to identify species that are threatened or endangered with extinction. Any species listed as threatened or endangered is managed as a provincially featured species only in those management units where those species are found, or might reasonably be expected to be found. In addition to the MNR featured species and the Committee on the Status of Species at Risk in Ontario listing, T&C 94 added two additional species - pine marten and the pileated woodpecker - to be monitored as representative species. This addition was made by the EA Board to ensure that forest management planning and implementation considered the needs of wildlife species requiring old growth forest characteristics.

As outlined in T&C 81, MNR was required to develop and implement a Provincial Wildlife Population Monitoring Program. This program was designed to monitor population trends associated with the four provincially featured species guidelines that were either available at the time of the EA Approval or in various stages of preparation. In addition, it required MNR to monitor ‘other wildlife’ species with specialized habitat requirements, which potentially were not addressed by those four guidelines.

T&C 81

MNR shall develop and implement a Provincial Wildlife Population Monitoring program within the Area of the Undertaking. This program will monitor population trends of representative terrestrial vertebrate species. Those species include:

(a) *Species which benefit from application of the Timber Management Guidelines for the Provision of Moose Habitat and/or the Timber Management Guidelines for the Provision of White-Tailed Deer Habitat (in preparation);*

(b) *Species which benefit from application of Timber Management Guidelines for the Provision of Pine Marten Habitat (pursuant to Condition 94(c)) and/or the Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat (pursuant to Condition 94(c));*

(c) *and species which utilize the following habitat types and features: snags, dead and downed woody material, riparian areas, mature/overmature stands, and large areas in a similar successional stage.*

Implementation Experience

In total, 92 species were selected for the monitoring program. Collectively, these 92 species represented all categories of species designated for monitoring by T&C 81. These species, which include carnivores, insectivores, herbivores and omnivores, are dependent for their survival on different forest habitats. They also operate at different scales, namely landscape, forest, and stand scales, and at different trophic or energy levels. This species selection ensured that if there were impacts on a wildlife population due to adverse impacts from forest management activities, there would be a change in the population of one or more of the 92 selected species being monitored.

For the purpose of wildlife population monitoring, MNR created, under the direction of the Provincial Terrestrial Assessment Program, Wildlife Assessment Units that are located across the province, in the Ministry's three administrative regions.

To date, the wildlife population-monitoring framework has not been fully implemented as originally designed by MNR.

There are a number of species-specific monitoring programs in place that contribute to the overall wildlife population-monitoring framework. These programs include: bird migration monitoring, nocturnal owl surveys, red-shouldered hawk and woodpecker surveys, amphibian call counts and roadside surveys, trapper surveys, forest bird surveys, salamander surveys, small mammal surveys, wolverine surveys, piping plover surveys, peregrine falcon surveys, and Project Feeder Watch. In addition, there are also programs in place for moose aerial inventories and black bear index monitoring.

Many of these monitoring programs are being delivered through various partnership arrangements (e.g., Canadian Wildlife Service, Bird Studies Canada). Through many of these monitoring programs, relevant species population data are being accumulated on a local, regional and provincial scale. Partners involved in the wildlife assessment program often produce annual reports updating wildlife population trends, while others publish these data on the Internet.

One of the inherent challenges associated with implementing the wildlife population-monitoring program relates to the difficulty in designing surveys for some species and groups of species. Methods to assess population levels of many species simply do not exist and efforts to use and test some methodologies have had mixed results. The wolverine survey, for example, gathers information from trappers and also relies on innovative baiting and photography techniques to verify the presence of this species. However, it is not yet possible to apply this information to gauge actual wolverine populations.

Similar challenges exist in monitoring woodland caribou populations. Woodland caribou are a threatened species in Ontario whose range of occupancy has receded northward over the past several decades. MNR is examining the cause of this change to determine contributing factors that may include changes in natural disturbance patterns, hunting, climate change, and forest management activities. A recovery plan is being prepared for woodland caribou in Ontario in recognition of its threatened status.

The science of wildlife population monitoring is continuing to evolve. Challenges associated with wildlife population monitoring are being addressed. MNR is conducting a review of the overall fish and wildlife program. This may lead to improvements related to program performance measures for a number of activities, including monitoring of wildlife populations. In addition, MNR has launched an Inventory, Monitoring, Assessment and Reporting initiative. This initiative has begun with a comprehensive review of MNR's monitoring and reporting programs. The review findings will then be used to redesign inventory, monitoring, assessment and reporting programs to achieve integration, efficiencies and improve program effectiveness.

These efforts will assist in linking the wildlife population monitoring with other ecologically based monitoring programs.

Analysis of the Implementation Experience

Since the EA hearings, MNR has moved forward with many wildlife populations monitoring initiatives, however the complete scope of the program has not been realized to date.

MNR has begun to augment its traditional featured species approach with ecological landscape analyses. In addition, MNR is taking a new hierarchical approach in the application of its implementation manuals. This hierarchical approach is discussed in detail in Section 3.5.2.1. The Forest Management Guide for Natural Disturbance Pattern Emulation, released by MNR in 2001, provides the basis for the shift from a featured species approach to a broad, ecosystem-based approach to habitat management.

In conjunction with this shift, there is a continuing need to monitor wildlife populations and to conduct research on the effects of forest management on wildlife habitat and wildlife populations. The need to consider landscape-level habitat requirements for all of the wildlife species that are presently categorized as provincially featured species, will continue.

MNR recognizes that wildlife populations fluctuate as a result of many factors. For example predation, weather, wildlife harvesting, habitat and disease can all contribute to population fluctuations. The contribution of each of these factors varies with species, time and location.

Research is being conducted by MNR, under the auspices of the effectiveness monitoring program for 'other wildlife', as required in T&C 80, Appendix 19, Part 4 (a), (b) and (c). This work is investigating and developing monitoring methodologies and offers promise for the future.

Benefits have been realized by integrating research for 'other wildlife' and the wildlife population monitoring programs, and through strong partnerships with outside agencies. These efforts should continue.

MNR and its partners were unable to monitor all 92 species originally envisaged in the wildlife population monitoring program designed in response to T&C 81. However, monitoring the impacts of forest management activities on wildlife populations remains important, and should continue.

Recommended Term and Condition:

MNR recommends that T&C 81 be deleted and replaced with the following:

30. MNR shall continue to implement a Provincial Wildlife Population Monitoring Program within the Area of the Undertaking and shall continue to investigate wildlife population monitoring methods. This program will provide long-term trend data on representative terrestrial vertebrate species and will collect information to support the testing of the effectiveness of forest management guides. The species to be

monitored include:

(a) species which benefit from forests managed for the purposes of maintaining early successional stages and where management direction comes from the Timber Management Guidelines for the Provision of Moose Habitat or the Forest Management Guidelines for the Provision of White-tailed Deer Habitat, and their successors;

(b) species which benefit from forests managed for purposes of maintaining late successional stages and where management direction comes from the Forest Management Guidelines for the Provision of Marten Habitat or the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat, and their successors; and

(c) species which utilize the following habitat types and features: snags, dead and downed woody material, riparian areas, mature/overmature stands, and large areas in a similar successional stage.

3.2.2.4 Monitoring Guideline Effectiveness

Current Requirement

The EA Board approved MNR's implementation manual approach, in which implementation manuals, which include guidelines, are used as tools to guide professional and technical staff. The EA Board provided, through T&C 80 and Appendix 19, for future improvement of the implementation manuals by requiring MNR to undertake effectiveness monitoring. Through effectiveness monitoring, management prescriptions and practices required by the implementation manuals are assessed to determine whether they are accomplishing their objectives.

T&C 80

MNR shall undertake long-term scientific studies to assess the effectiveness of the provincial guidelines for moose and fish habitat and tourism values. These studies shall include an assessment of the effects of current timber management practices on moose and other wildlife habitat, fish habitat and tourism values. Particulars of this condition are set out in Appendix 19.

Appendix 19: Provincial Level Monitoring: Long-Term Scientific Studies

1. *Timber Management Guidelines for the Provision of Moose Habitat The studies will:*
   - *(a) Assess the efficacy of the guidelines in providing moose habitat; and*
   - *(b) Recommend improvements to the guidelines.*
2. *Timber Management Guidelines for the Protection of Fish Habitat The studies will:*
   - *(a) Assess the efficacy of the guidelines in protecting fish and fish habitat;*
   - *(b) Investigate the relationship between forest cover manipulation and protection of fish habitat in the Ontario situation;*
   - *(c) apply study treatments to both lakes and streams;*
   - *(d) include the following measurements:*
     - *(i) watershed mapping (e.g., boundaries of watersheds, lake bathymetry, forest mapping, fish spawning sites),*
     - *(ii) stream water levels and flow,*
     - *(iii) selected water quality parameters (e.g. phosphorus, temperature, dissolved oxygen, pH, alkalinity),*
     - *(iv) turbidity and major ion composition,*
     - *(v) sediments (e.g. substrate composition in spawning areas, downstream from road water crossings), and*
     - *(vi) fish population characteristics; and*
   - *(e) recommend improvements to the guidelines.*
3. *Timber Management Guidelines for the Protection of Tourism Values The Studies will:*
   - *(a) Assess the efficacy of the guidelines by sampling tourism operations in Northern Ontario (e.g. remote mainbase lodges, accessible mainbase lodges, outpost camps); and*
   - *(b) Recommend improvements to the guidelines*
4. *Other Wildlife The studies will:*
   - *(a) Assess the efficacy of the Timber Management Guidelines for the Provision of Moose Habitat in providing habitat for other wildlife species;*
   - *(b) Assess the efficacy of timber management practices other than those described in the Timber Management Guidelines for the Provision of Moose Habitat in providing habitat for other wildlife species; and*
   - *(c) Recommend modifications to appropriate implementation manuals or the development of new implementation manuals.*

Implementation Experience

For each of the four programs as defined by Appendix 19, MNR established long-term scientific research programs, as directed. These programs remain ongoing.

The long-term research program as directed by T&C 80, Appendix 19(1), is known as the Moose Guidelines Evaluation Project. This project has two research design components:

- habitat analysis; and
- moose life history.

Its design has two research components, namely habitat analysis and moose life history. While the study area for the project was concentrated in one area of northwestern Ontario, it has collected more location and habitat information on moose than any other similar study. The research has led to more than a dozen published scientific papers and more than 30 internal MNR reports and research protocols. The field portion of the northwestern Ontario study has been completed and analysis of the largest data set of its kind is currently underway. Research on the use of aquatic feeding habitats in eastern Ontario, in the Great Lakes-St. Lawrence forest region, is being done to validate the preliminary results of the northwestern Ontario study (which is in the boreal forest region). Some of the findings on particular aspects of moose habitat (e.g., calving areas) have been provided as recommendations to revise the existing moose habitat guidelines.

MNR assembled two project teams to carry out the long-term research required for T&C 80, Appendix 19(2), the studies on the Timber Management Guidelines for the Protection of Fish Habitat:

- the Coldwater Lakes Experimental Watersheds team studied lake ecosystems near Atikokan; and
- the Comparative Aquatic Effects team studied cold-water stream ecosystems near Thunder Bay.

Both research programs have investigated the relationship between forest cover manipulation and the protection of fish habitat. The research findings have resulted in the publication of more than 30 scientific papers. Dozens of other reports, manuscripts, and theses have also been published. While the fieldwork by the Coldwater Lakes Experimental Watersheds team is nearing completion, there is still considerable field work planned by the team studying cold-water stream ecosystems.

Recommendations to revise the fish habitat guidelines (MNR 1988a) (e.g., limited harvesting to the shoreline on additional lakes) have been made based on the findings of both study teams.

The Tourism Effects Research Unit spearheaded the research on the tourism guidelines (T&C 80, Appendix 19 (3)). Research to date has resulted in a number of publications for refereed journals that are in various stages of acceptance and submission. In addition, two book chapters, two graduate theses, 11 technical reports and more than 30 papers and presentations associated with various meetings, conferences and workshops have resulted from this work.

The research has been successful in testing and documenting effects of forest management on resource-based tourism in general, although it has not been possible to assess specifics within the guidelines. Knowledge obtained through this research was provided to the team responsible for preparing the recently revised tourism guidelines (MNR 2001f) and associated documents (MNR 2001g).

The Wildlife Working Group was asked to develop a proposal for evaluating the effects of forest management on 'other wildlife', as directed by T&C 80, Appendix 19(4). The objective of their proposal was to compare the response of wildlife (as measured by population levels, species diversity, etc.), at multiple temporal and spatial scales, to land-cover originating from disturbances caused by natural processes and from timber management practices.

Two hypotheses were put forward. The first suggests that over time and space, a managed forest does not look different than a natural forest. The second suggests there are no differences in wildlife populations between managed and natural forests. The second hypothesis would only need to be tested if the first hypothesis was proven to be false. The first hypothesis does appear to be false and work has begun to test the second hypothesis.

Research on 'other wildlife' has produced a large number of publications and communication products, tools to assess landscape patterns, new interpretive maps and analyses of the amounts of woody debris and other measures of internal forest structure. In addition, this research compared forest patterns created by logging and natural disturbances in the relatively humid Northeast Region as well as in the drier Northwest Region. Further work has resulted in development of new programming tools and models, which will allow for much faster habitat pattern analyses in a multi-scale environment. A new research project to examine the use of habitat by forest songbirds is underway in several locations in the province.

Analysis of the Implementation Experience

The study by the Moose Guidelines Evaluation Project resulted in major advances in the understanding of how moose use forested habitats. This includes moose use of habitat at a broad scale, as well as use of special habitats which are normally identified as values for planning purposes and managed with Area of Concern prescriptions (e.g., moose calving sites). A paper on timber management and natural disturbance effects on moose habitat, which was published in the Journal of Wildlife Management, demonstrated that the application of the moose habitat guidelines resulted in a high density of forest access roads. If road use strategies do not restrict hunter access, high road densities lead to high moose harvests. This can result in a moose population that declines or stagnates, despite apparent improvements in the quantity and quality of habitat.

As a result of the research and the knowledge gained about moose use of forested habitats, revisions are needed to the moose habitat guidelines. Revisions have been recommended which deal with moose habitat at a coarse scale (e.g., how patterns of forest patches affect moose habitat at the population level) as well as at a finer scale (e.g., information about specific forest habitats where moose calve). Further insight on moose habitat use will result from further analysis and completion of the study.

The Coldwater Lakes Experimental Watersheds team concluded that the fish habitat guidelines have been effective in protecting lakes from potentially harmful impacts associated with forest management operations. Preliminary results suggest that extensive clearcutting and site preparation along the shores of the small cold-water lakes have not resulted in harmful physical, chemical or biotic impacts. While there is recognition by the research team that this work needs to be interpreted cautiously, there is also a general consensus among them that the present fish habitat guidelines, with respect to the provision for careful shoreline harvesting practices, may be too conservative.

The Comparative Aquatic Effects team still has considerable research to complete. Early research results however, suggest the fish habitat guidelines are effective in preventing adverse impacts of forest operations on small streams. The same cannot be said for very small, unmapped streams. The presence of an unmapped stream is unknown during the preparation and approval of a forest management plan. Consequently, the stream may be affected during subsequent forest operations.

Recommendations to improve the fish habitat guidelines have been made as a result of input from both study teams.

Testing the effectiveness of the tourism guidelines has proven to be difficult because of the lack of quantifiable standards in the tourism guidelines (MNR 1987b). The Tourism Effects Research Unit, however, was able to assess tourism values, attitudes, perceptions and behavioural intentions of resource-based tourists and tourism operators (e.g., what kind of activities tourists expected to be doing when at a lodge). Through this research it has been possible to determine the effects on tourism from forest operations and to identify how the needs of tourism operations were addressed in forest management planning.

There is now a better understanding of the inter-relationships between tourism and forest operations in northern Ontario. The tourism research has contributed to an improvement in the relationships between both industries. Research will continue to improve the understanding of the needs and inter-relationships of the tourism and forest industry, the government, and tourists themselves. The research is also being expanded to examine other recreational and non-consumptive uses of the forest.

Implementing a long-term scientific study on 'other wildlife' was challenging, largely due to the difficulty in defining what was meant by 'other wildlife'. MNR interpreted 'other wildlife' to be all species of wildlife, and not restricted to vertebrates. MNR based its research on the assumption that changes in forest habitat patterns and structure, from a fine to very broad scale, would have an impact on 'other wildlife'. This assumption was investigated mainly through the use of computer modelling tools.

Models and other analytical tools have led the researchers to conclude managed forests do look different from natural forests. The team has begun to work on their second hypothesis - to determine whether wildlife populations are different between the two forest types. Four projects have been initiated, focusing on aspects of songbird habitat.

There is a close relationship between the research on 'other wildlife' and the research being done specifically for the Moose Guidelines Evaluation Project. One component of the 'other wildlife' research considers whether the moose guidelines function as a 'featured species' guideline. Consequently, there are also close linkages between these two research projects and T&C 81, the wildlife population-monitoring program. Section 3.2.2.3 provides a more complete discussion.

The long-term research projects directed by T&C 80 have provided insights to MNR's guideline approach to forest management in general. This work has also resulted in recommendations to improve existing guidelines. The research being done under direction of T&C 80, and in particular the projects researching the effectiveness of the moose guidelines and 'other wildlife', have also contributed to knowledge being used to develop MNR's evolving, hierarchical approach to guideline implementation. For example, the research being done by these two programs provided much of the information used to help develop the Forest Management Guide for Natural Disturbance Pattern Emulation.

The intent of T&C 80 was to conduct long term scientific research on the effectiveness of specific guidelines. The present studies, which have been initiated as directed by Appendix 19 of the EA Approval, are continuing and will be completed in the future. There will be a need to ensure other guidelines, or new approaches in the use of guidelines and implementation manuals, are examined. Present and future scientific research studies will continue to be led by experts, helping to ensure the suitable and necessary parameters for the studies are incorporated into the study design.

Given the knowledge and accomplishments to date from the guideline effectiveness monitoring studies, MNR is recommending T&C 80 be amended and the Appendix 19 be deleted.

Recommended Term and Condition

MNR recommends that T&C 80 and Appendix 19 be deleted and replaced with the following:

31. MNR shall maintain a program of scientific studies to assess the effectiveness of provincial implementation manuals (guides).

3.3 Reporting

The EA Approval required MNR to prepare two general categories of reports: those used directly in forest management planning and those that report more broadly on forest management activities. Forest management planning reporting has been discussed in Section 3.1 and has resulted in recommendations by MNR for the preparation of the following reports at the management unit level:

- Aboriginal Background Information Report;
- Report on Protection of Identified Aboriginal Values; and
- Management Unit Annual Report.

This section describes the second category of reports, those that report more broadly on forest management activities. These are provincial level reports, namely:

- Provincial Annual Report on Forest Management; and
- State of the Forest Report.

MNR is also recommending the preparation of a new report that describes the ongoing implementation of this EA Approval. That report is discussed in Section 3.7.2 and is referred to as:

- Five Year EA Report.

The Provincial Annual Report on Forest Management will provide an overview at the provincial level of ongoing forest management activities and highlights of the advances made in the area of continuing developments of technical and scientific aspects of forest management in Ontario. A summary of results of local negotiations with Aboriginal peoples will also be included in this report. The Provincial Annual Report on Forest Management is based on information provided in Management Unit Annual Reports.

The State of the Forest Report will make use of a provincial set of criteria and indicators to report on forest management in Ontario, based on international and national frameworks developed through the Canadian Council of Forest Ministers (CFS 1995a, 1995b).

3.3.1 Provincial Annual Report on Forest Management

Current Requirement

The Provincial Annual Report on Forest Management is the primary means of providing the public with information about the ongoing forest management activities on Ontario's Crown forests. The information in this report comes primarily from the Management Unit Annual Reports required for forest management planning. The Provincial Annual Report on Forest Management is tabled in the Legislature. MNR has produced these reports to meet the requirements of T&C 82 and Appendix 20.

T&C 82

MNR shall produce a provincial "Annual Report on Timber Management" which shall be tabled in the Legislature. The contents of this report are listed in Appendix 20.

Appendix 20: Provincial Annual Report On Timber Management To The Legislature

1. *The Annual Report on Timber Management shall include:*

(a) *a summary of Ontario's land and forest base;*
(b) *forest products industry statistics and harvest volumes;*
(c) *area harvested and average and maximum size of clearcuts;*
(d) *volume losses due to natural forces categorised according to insects, disease, fire, blowdown, others;*
(e) *government revenues from stumpage and area charges.*
(f) *Spending for maintenance and construction of primary, secondary and other roads; spending for regeneration, tending and protection by treatment method.*
(g) *forecast and actual spending on tending and regeneration pursuant to Condition 38(a);*
(h) *a summary of management activities; and a summary of silvicultural effectiveness in the form of areas assessed for Free-to-Grow status, areas declared Free-to-Grow and condition survey results;*
(i) *a summary of the monitoring (compliance, effects and effectiveness) results, including a summary drawn from Annual Reports, prepared for each forest management unit in accordance with Appendix 18;*
(j) *results of negotiations with Aboriginal peoples pursuant to Condition 77 including statistics describing licences and resource allocation to Aboriginal peoples, on a district basis.*
(k) *a summary of major problems identified by independent audits as provided in Condition 86;*
(l) *a list of all Timber Management Plans currently in preparation and those which are expected to be initiated in that year including a tentative list of starting dates;*
(m) *kilometres of primary and secondary roads constructed, maintained, gated, signed or physically or naturally abandoned;*
(n) *incidents of washouts of water crossings on access roads in Areas of Concern as provided in Condition 52(d) and the status of criteria specified in Condition 52(e);*
(o) *merchantable and unmerchantable timber wastage by volume and species pursuant to condition 78(b)(ii); and*
(p) *progress reports on the following scientific research, technical development programs and policy development programs, which MNR has undertaken:*
    - *Condition 27 Clearcut size and configuration monitoring;*
    - *Condition 52(e) Water crossing removal criteria development;*
    - *Condition 94(b) Environmental Guidelines for Timber Management Activities;*
    - *Condition 94(c) Pine Marten and Pileated Woodpecker habitat Guidelines;*
    - *Condition 96 Silvicultural effectiveness monitoring initiatives;*
    - *Condition 97 Forest Ecosystem Classification Program;*

- *Condition 98 Northern Ontario Wetlands Evaluation System;*
- *Condition 99 ANSIs;*
- *Condition 100 Growth and Yield Studies;*
- *Condition 101 Full Tree Harvest / Long term Productivity;*
- *Condition 102 Tending and Protection improvement Program;*
- *Condition 103 Old Growth;*
- *Condition 104 Socio Economic analysis;*
- *Condition 106 Roadless Wilderness Areas Policy;*
- *Condition 107 Landscape Management, Biodiversity, HSA;*
- *Condition 108 Geographic Information Systems; and*
- *Condition 110 District Land Use Guidelines*

Implementation Experience

A Provincial Annual Report on Forest Management spans one fiscal year, from April 1st of year to March 31st of the next.

The last 5 Annual Reports on Forest Management were published as follows:

- The first Annual Report on Forest Management for the year April 1, 1995 to March 31, 1996 was filed with the Clerk of the House for tabling and subsequently released to the public in 1998 (MNR 1998a).
- The second Annual Report on Forest Management for the year April 1, 1996 to March 31, 1997 was completed by October, 2000 and tabled with the Clerk of the House on November 15, 2000 and subsequently released to the public (MNR 2000c).
- The third Annual Report on Forest Management for the year April 1, 1997 to March 31, 1998 was completed by October 2000 and tabled with the Clerk of the House on January 22, 2001 and subsequently released to the public (MNR 2000d).
- The fourth Annual Report on Forest Management for the year April 1, 1998 to March 31, 1999 was completed by December 2000 and tabled with the Clerk of the House on March 7, 2001 and subsequently released to the public (MNR 2000e).
- The fifth Annual Report on Forest Management for the year April 1, 1999 to March 31, 2000 was completed by September 2001 and tabled with the Clerk of the House on February 7, 2002 (MNR 2001h).

MNR has experienced some challenges with respect to the timely preparation of reports. MNR has taken actions to address this situation and has now put in place improvements to deliver more timely provincial level reports including a district reporting protocol, increased training and follow-up. Further, development and implementation of the Forest Information Manual will ensure that information required for forest management planning is collected, stored and managed for multiple uses, including having information available in a retrievable and usable format for reporting purposes.

Analysis of Implementation Experience

Based on the experience to date, MNR is recommending improvements to the information presented in the Provincial Annual Report on Forest Management and for the timely preparation of the report. The report will continue to summarize individual Management Unit Annual Reports and will provide a provincial perspective on forest management activities and the progress being made on subjects of interest such as research and development and the results of local negotiations with Aboriginal communities.

MNR is recommending a consolidation of the subject matters required to be reported in the Provincial Annual Report on Forest Management. In addition, MNR recommends updating the descriptions and current sources of information that are used in the report.

Recommended Term and Condition

MNR recommends that T&C 82 and Appendix 20 be deleted and replaced with the following:

32. (a) MNR shall annually prepare a provincial report (the "Provincial Annual Report on Forest Management") that shall be tabled in the Legislature. The report will be provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following information:

(i) a summary of Ontario's land and Crown forest base;

(ii) forest products industry statistics;

(iii) a description of forest disturbance, including:

- **area and volume of Crown forest resources harvested,**
- **a summary of the discussions contained in Management Unit Annual Reports on the subject of areas harvested under the clearcut silvicultural system, based on size and frequency parameters required by implementation manuals (guides) and the Forest Management Planning Manual, and**
- **areas and or volumes of losses associated with natural forces such as insects, disease, forest fire, blowdown.**

(iv) provincial government revenues from Crown charges, as defined by the *Crown Forest Sustainabiltiy Act*, including payments associated with penalties, offences and the harvest of Crown forest resources;

(v) a summary of expenditures from the Forest Renewal Trust and the Forestry Futures Trust;

(vi) a summary of the amount of regeneration, tending and protection activities;

(vii) a summary of silvicultural effectiveness;

(viii) a summary of compliance monitoring results and an enforcement summary;

(ix) a summary of forest access road construction, maintenance, abandonment and roads subject to access control;

(x) a summary of major findings reported in independent forest audits;

(xi) a description of significant advances and milestones in scientific research, technical development programs, and policy developments related to forest management; and

(xii) a summary of the progress of on-going negotiations with Aboriginal peoples on a district-by-district basis, as per Term and Condition 34.

3.3.2 State of the Forest Report

Current Requirement

The EA Board's decision identified the State of the Forest Report as an important communication link with the public. T&C 84 established a requirement for a State of the Forest Report, and Appendix 22 sets out the content requirements of the report.

Subsequent to the EA Board's decision, the *Crown Forest Sustainability Act* was developed and became law April 1, 1995. Section 22 of the Act requires MNR to prepare a report on the state of the Crown forest at least once every five years, and to table it in the Legislature.

T&C 84

Every five years, MNR shall produce a provincial "State of the Forest Report" which shall be tabled in the Legislature. The contents of this report are listed in Appendix 22.

Appendix 22: State Of The Forest Report

1. The State of the Forest Report shall include:
- *(a) an update of the "Forest Resources of Ontario, 1986", including a summary of age class distribution by working group for each MNR Region;*
- *(b) a summary of the preceding five "Annual Reports on Timber Management", including a provincial overview and summary of silvicultural effectiveness drawn from data contained in the Annual Reports;*
- *(c) wood supply synopses and projections by management unit, Region and cover type, and a description of typical strategies used to address wood supply concerns;*
- *(d) a discussion of wood supply as related to the purpose of the undertaking;*
- *(e) an estimate of the change in forest growing stock during the five year term;*
- *(f) a description of progress on improvement of implementation manuals, advances in information collection and management, and scientific research and technical development; and*
- *(g) a description of relevant provincial-level problems and issues anticipated over the next five years, and a description of any programs or projects expected to be implemented or enhanced to address those problems and issues.*
- *(h) the effectiveness of the timber management planning process in terms of*
  - *(i) average and maximum elapsed time required to prepare and approve individual Timber Management Plans,*
  - *(ii) estimates of average preparation costs and actual time invested for individual Timber Management Plans.*
  - *(iii) a summary of minor and major amendments to approved Timber Management Plans since the last Report, including a record of input from Local Citizens Committees concerning the categorization of Plan amendments and*
  - *(iv) a complete record of all bump-up requests, and their disposition since the last Report.*
- *(i) the approved and updated Timber Production Policy pursuant to Condition 105(d);*
- *(j) conclusions on the success of meeting non-timber management objectives for the forest management unit;*
- *(k) forecast and actual spending on tending and regeneration pursuant to condition 38(a);*
- *(l) summary of the major unresolved problems associated with visual resources as provided in Condition 24; and*
- *(m) area harvested and average and maximum size of clearcuts.*

Implementation Experience

The State of the Forest Report, 2001 was tabled in the Legislature on March 12, 2002. It covers the five-year period of 1995-2000. The State of the Forest Report, 2001 is provided with this submission as required by T&C 114(a)(iv). The contents of the State of the Forest Report, 2001, which are specifically required by T&C 84 and Appendix 22, are contained in Chapter 4 of the report, titled EA Decision, Appendix 22 Requirements.

Chapter 3 of the State of the Forest Report, 2001 also provides information on the state of Ontario's forest. This chapter addresses the requirements of the *Crown Forest Sustainability Act* by reporting on the sustainability of Ontario's Crown forests using a nationally and internationally recognized criteria and indicators approach. This reporting complements and exceeds the requirements of T&C 84 and Appendix 22 by providing a more comprehensive report on Ontario's forests, including private land forests and forests outside of the Area of the Undertaking. Chapter 3 also meets the policy direction and guiding principles established in the document, Forest Resource Assessment on Crown Lands in Ontario (MNR 1998b).

The State of the Forest Report, 2001 also contains in Appendix 1 the Forest Resources of Ontario 2001, and in Appendix 2 the Report on Wood Supply in Ontario as required by Appendix 22 of the EA Board's decision.

Analysis of Implementation Experience

The requirements for the State of the Forest Report, and the annual reports on forest management at the management unit and provincial level, were all designed to serve as a means of reporting to the public on progress in implementing the EA Approval. Since the EA Approval, reporting on the state of the forest has evolved both nationally and internationally to a point where a common approach of using agreed upon criteria, and jurisdiction specific indicators, to monitor and report on forest sustainability has become the norm.

MNR developed a provincial set of criteria and indicators, based on international and national frameworks developed through the Montreal process and the Canadian Council of Forest Ministers, to report on sustainable forest management in Ontario. This Ontario-specific framework of criteria and indicators has been used to assess and report on various ecological, social, economic and institutional aspects of Ontario's forest resources and their management.

The criteria and indicators approach was used in preparing a major portion of the State of the Forest Report, 2001, and it is recommended that this approach continue to be used in future State of the Forest Reports. The same subject matter required to be reported upon by the EA Approval is also reported upon using the criteria and indicator approach.

MNR has identified a set of goals and objectives for criteria and indicators based on existing legislation and policy. Goals and objectives set the direction that management should achieve.

Ontario's framework for sustainable forest management includes the following seven criteria, expressed as provincial forest sustainability goals:

1. Conserving the biological diversity in Ontario's forests.
2. Maintaining and enhancing forest ecosystem condition and productivity in Ontario.
3. Protecting and conserving Ontario's forest soil and water resources.

4. Monitoring Ontario's forest contributions to global ecological cycles.
5. Providing for a continuous and predictable flow of economic and social benefits from Ontario's forests.
6. Accepting Ontario's social responsibilities for sustainable forest development.
7. Maintaining and enhancing Ontario's framework for sustainable forest management.

Ontario is committed to continue developing the provincial framework of forest sustainability criteria and indicators to be compatible with the Canadian framework. Ontario's criteria, elements, objectives, and indicators will be used to monitor, assess, and report on how well Ontario is achieving sustainable forest management objectives. The associated performance measures will be used to continually improve forest management practices.

Ontario's framework represents current knowledge about how forest ecosystems function, and is reflective of MNR's current ability to measure specific components. Ontario currently has 67 indicators of sustainable forest management at the provincial level. These indicators are grouped into 22 critical elements. Indicators may change over time, as knowledge advances and the ability to monitor and measure improves.

Recommended New Term and Condition

MNR recommends that T&Cs 84 and Appendix 22 be deleted and replaced with the following:

33. (a) MNR shall prepare a report on the state of the Crown forests (the "State of the Forest Report") at least once every five years in accordance with the *Crown Forest Sustainabiltiy Act*. The report shall be tabled in the Legislature, provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following:

(i) summaries of the most recent versions of the Forest Resources of Ontario and An Assessment of Ontario's Forest Resources; and

(ii) an examination of the management of the Crown forests including a discussion of the status of the forest resource through the use of appropriate indicators. That examination will include:

- **an analysis of information consolidated from the previous five Provincial Annual Report on Forest Management;**
- **a description of significant advances in forest research and other developments and a discussion of how the results are being incorporated into forest management; and**
- **a synopsis of the findings of independent forest audits conducted in the previous five years and a discussion of how the findings are being addressed in forest management.**

(iii) a summary of the progress of on-going negotiations with Aboriginal peoples on a district-by-district basis, as per MNR Term and Condition 34.

3.4 Negotiations with Aboriginal Peoples

Current Requirement

MNR has undertaken extensive negotiations with Aboriginal peoples during the term of the EA Approval. MNR believes it is appropriate to provide an overview of the implementation of T&C 77, even though it is not required under T&C 114. This overview is based largely on a summary of progress as reported in Chapter 9 of Provincial Annual Reports on Forest Management from 1995/96 to 1999/2000. A progress report on T&C 77 is contained in Section 5.0.

T&C 77 requires MNR District Managers to conduct negotiations at the local level on a number of matters with Aboriginal peoples to identify and implement ways of achieving more equal participation by Aboriginal peoples in the benefits provided through forest management. T&C 77 was imposed by the EA Board to address the fact that "Aboriginal Communities historically have been and are today [at the time of the EA hearings] excluded from sharing the social and economic benefits…from the planning and conduct of timber operations on Crown land" (Koven and Martel 1994, Page 372). T&C 77 also requires reporting on progress in the provincial Annual Reports on Timber Management to the Legislature.

__T&C 77__

During the term of this approval, MNR district managers shall conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through timber management planning. These negotiations will include but are not limited to the following matters:

- *(a) Providing job opportunities and income associated with bush and mill operations in the vicinity of Aboriginal communities.*
- *(b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities.*
- *(c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist.*
- *(d) Providing timber licences to Aboriginal people where unalienated Crown timber exists close to reserves.*
- *(e) Development of programs to provide jobs, training and income for Aboriginal people in timber management operations through joint projects with the Department of Indian and Northern Affairs.*
- *(f) Other forest resources that may be affected by timber management or which can be addressed in the timber management planning process as provided for in Condition 23(c).*

MNR shall report on the progress of these on-going negotiations district-by-district in the Annual Report on Timber Management that will be submitted to the Legislature (Condition 82 and Appendix 20).

Implementation Experience

In January 1996 MNR provided draft Implementation Guidelines for T&C 77 to MNR Districts. The purpose of these guidelines was to provide District Managers with a consistent framework for T&C 77 implementation that built on existing initiatives and facilitated development of new initiatives and to provide Aboriginal communities and the forest industry with information MNR District Managers would use in the implementation of T&C 77. During initial implementation there were some inconsistencies in early reporting.

A revised draft guideline was released in September 1999. It included an interpretation of T&C 77, implementation advice, and direction on reporting.

In practice, MNR District Managers have conducted negotiations at the local level by way of meeting, discussing, sharing information, and facilitating co-operation and dialogue with Aboriginal people and others.

This was seen as the most effective way of implementing the term and condition and achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management.

MNR recognizes each Aboriginal community is different and has tailored its negotiations accordingly. This approach reflects the EA Board's view that communities may have different objectives and approaches and that it was not for the EA Board to dictate the specifics around the opportunity to participate more fully in forest management. In addition to those Aboriginal communities that are situated within a management unit, MNR District Managers have also held negotiations with Aboriginal communities adjacent to a management unit. The Ministry considers the implementation of T&C 77 to be an on-going exercise.

Since the EA Board decision in 1994, Aboriginal communities have progressively benefited from increasing economic development opportunities associated with forestry.

Jobs and income for Aboriginal communities have increased through a wide range of business opportunities realized throughout the Area of the Undertaking. Millions of dollars of silvicultural contracts, joint ventures and mutual agreements are arranged annually with Aboriginal people by the forest industry and by MNR. These include:

- silviculture contracts for pre-commercial thinning, manual tending, tree planting, nursery stock production, pruning, cone collection;
- data collection contracts for collection of values information, native values mapping, wood measurement, stocking assessment, forest inventories;
- wood harvesting contracts for sawlogs, veneer, and pulpwood;
- contracts for forest fire fighting, road construction and maintenance, wood transportation, forest planning services, nuisance animal management and tree marking; and
- direct employment in mill operations and the supervision and layout of forest operations.

Progress has also been realized by increasing the amount of timber made available to Aboriginal people through contracts and licences. The granting of licences involves some discussion between MNR and some member of an Aboriginal community. Initially contracts and licences were small, however, as First Nations developed their capacity in forest operations and management, their sizes increased.

At the provincial level, in 1986, only about 100,000 cubic meters of wood were licenced to Aboriginal people. By the year 2000, over 1.5 million cubic meters of wood within the Area of the Undertaking were allocated to, cut by, contracted to, or offered to Aboriginal people and businesses. Approximately one million cubic meters was harvested by Aboriginal people, accounting for 4 to 5% of the wood harvested in Ontario.

The federal and provincial governments, as well as the forest industry, have invested considerable effort in developing and sponsoring participation in training programs for Aboriginal people. MNR for example has worked with the Canadian Forest Service in implementing its Aboriginal Forestry Program. MNR has also worked closely with community colleges in their delivery of programs such as the Native Forestry Technician and Native Resource Technician programs. MNR has offered training and employment to Aboriginal people through internship programs and Co-op programs for resource professionals and technicians (e.g., foresters, biologists, Conservation Officers).

The forest industry has also worked extensively with federal and provincial agencies such as Human Resources Development Canada, Fednor, the Ministry of Training Colleges and Universities, and the Northern Ontario Heritage Fund Corporation to deliver employment and pre-employment training programs. These programs have generally been directed toward employment opportunities in mill and woodland operations.

Progress has also been made in providing opportunities associated with other forest resources and in work that directly supports the development of forest management plans. For example, collecting cones for seed extraction occurred in several districts.

Aboriginal people undertook a variety of data collection operations throughout the Area of the Undertaking, in support of resource management being conducted by MNR and the forest industry. These included regeneration assessments, tree planting assessments, forest inventories, volume table sampling, values identification, values mapping and the preparation of Background Report on the Identification of Native Values.

The implementation of T&C 77 has also been the subject of two investigations completed under the Environmental Bill of Rights in 1999. The investigations concluded that MNR was in compliance with T&C 77 and that efforts to date had resulted in economic opportunities for local First Nation communities. Section 1.2.5 provides additional information on this matter.

MNR has reported on progress under T&C 77 each year in provincial Annual Reports on Forest Management.

Analysis of Implementation Experience

The implementation of T&C 77 has been the topic of extensive discussion within the Aboriginal community, the forest industry and MNR. Those discussions have often raised the same points as argued before the EA Board at the original EA hearings. It is important, therefore, to understand the background to the EA Board's decision and the term and condition that was ordered (Koven and Martel 1994, Chapter 10).

The EA Board required MNR to negotiate with Aboriginal communities "…in order involve them [Aboriginal peoples] more directly in timber management planning by giving them the opportunity to share in the social and economic benefits enjoyed by other residents of northern Ontario" (Koven and Martel 1994, Page 374). This requirement flows from evidence presented to the EA Board that Aboriginal Communities, for a variety of reasons, had been excluded from "sharing the social and economic benefits accruing to non-native communities in the planning and conduct of timber operations" (Koven and Martel 1994, Page 374). T&C 77 was set out by the EA Board as part of its mandate under the *Environmental Assessment Act* which the EA Board saw as being "to ensure our approval of the undertaking meets the purpose of the Act: "the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in

Ontario of the environment" (Koven and Martel 1994, Page 374). The EA Board concluded Aboriginal and treaty rights and timber licencing were beyond the scope of the EA Approval.

Accordingly, the EA Board did not expect the negotiations referred to T&C 77 to include Aboriginal and treaty rights and stated, "For the purposes of our approval, we view these negotiations as being part of the timber management planning process and outside of processes dealing with issues of treaty and Aboriginal rights and land claims" (Koven and Martel 1994, Page 375). Despite this direction, the subject of Aboriginal and treaty rights has sometimes complicated local negotiations between District Managers and Aboriginal peoples. Although unable to address subjects of Aboriginal and Treaty rights, MNR has made steady progress in increasing the benefits provided to Aboriginal people associated with forest management planning.

The EA Board also heard arguments concerning licencing and proposals that MNR should be legally required to allocate a percentage of timber to specific Aboriginal groups. The EA Board concluded that licencing was not a matter for this EA Approval, but was more properly dealt with by MNR under the *Crown Timber Act* that was in place at the time. However the EA Board did recommend that MNR take steps to increase the amount of timber licenced to Aboriginal people. The EA Board did not set out specifics as to how this was to occur. A number of factors affect the provision of harvesting opportunities, including the availability of timber, and finding the suitable mechanism to address the needs of the Aboriginal community.

A review of the progress report for T&C 77 shows that MNR responded to EA Board's intentions in a number of different ways. These include the following:

- bringing forward *Order-in-Council 993/95* (*O.I.C. 993/95*), which enabled the Minister to grant Forest resource licences and enter into supply agreements to provide economic opportunities for Aboriginal people without following the competitive process that would otherwise be required under the *Crown Forest Sustainability Act*,
- requiring business plans submitted in response to a competitive process in allocating surplus Crown timber to describe the economic opportunities provided for Aboriginal people,
- providing Aboriginal timber licensees the opportunity to participate in discussions leading to the creation of a new management entity that would take on the responsibilities of a Sustainable Forest Licensee on former Crown management units, and
- providing direction to District Managers on how best to implement T&C 77 in order that greater economic benefits from forestry activities be realized by Aboriginal people.

An analysis of the progress under T&C 77 indicates that between 1986 and 2000, there has been a ten-fold increase in the volume of wood harvested by Aboriginal people, amounting to 4-5% of the annual harvest of Crown timber in Ontario.

In addition to reporting on these negotiations in the future Provincial Annual Report on Forest Management, MNR will continue to provide a summary of the progress of ongoing negotiations with Aboriginal peoples on a district-by-district basis. For a complete description of contents of the State of the Forest Report, see Section 3.3.2.

Many initiatives have contributed to the progress made in improving the economic opportunities made available to Aboriginal people since the EA Board rendered its decision in 1994. While not all of this progress can be attributed exclusively to the implementation of T&C 77, it has undoubtedly been the major catalyst for MNR, the forest industry and Aboriginal communities to take action.

MNR is committed to ongoing negotiations with Aboriginal people and will continue to involve the forest industry in these negotiations. MNR is committed to identifying ways of improving participation by Aboriginal people in the benefits of forest management, and recommends that the content of T&C 77 continue with minor updating. This updating deletes references to T&C 23 (c), 82 and Appendix 20 of the original EA Approval, since this T&C numbering and content will change. References to 'timber' have been updated to 'forest', reference to 'unalienated' has been updated to 'unallocated', reference to 'the Department of Indian and Northern Affairs' has been updated to 'Indian and Northern Affairs Canada' and the 'Annual Report on Timber Management' is updated to read 'Provincial Annual Report on Forest Management'.

Recommended Term and Condition

MNR recommends that T&C 77 be retained and updated to read as follows:

34. During the term of this approval, MNR District Managers shall conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management planning. These negotiations will include but are not limited to the following matters:

- **(a) Providing job opportunities and income associated with bush and mill operations in the vicinity of Aboriginal communities.**
- **(b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities.**
- **(c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist.**
- **(d) Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves.**
- **(e) Development of programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with Indian and Northern Affairs Canada.**
- **(f) Other forest resources that may be affected by forest management or which can be addressed in the forest management planning process.**

MNR shall report on the progress of these on-going negotiations district-by-district in the Provincial Annual Report on Forest Management that will be submitted to the Legislature.

3.5 Continuing Development and Programs

The EA Approval required MNR to establish committees, develop implementation manuals, collect information, undertake studies and expand its public education program. The nature of these terms and conditions required ongoing continuing development during the term of the approval. These requirements have been addressed in this section of the Timber Class EA Review.

Specifically, this section has been divided into five sub-sections that will address the following requirements:

- Advisory Committees
- Implementation Manuals
- Information Collection and Management
- Scientific Research and Technical Development
- Public Education on Forest Management

Sub-section 3.5.1 Advisory Committees addresses provincial and regional level advisory committees. Local citizen committees are covered in sub-section 3.1.3, Public and Aboriginal Consultation.

Subsection 3.5.2 Implementation Manuals addresses matters pertaining to implementation manual review and revision, emulating natural disturbance patterns and criteria for water crossing removal.

Subsection 3.5.3 Information Collection and Management addresses matters pertaining to the collection and management of information including, inventory information and management systems, forest ecosystem classification, northern Ontario wetlands evaluation system and areas of natural and scientific interest.

Subsection 3.5.4 Scientific Research and Technical Development addresses matters pertaining to a growth and yield program, full-tree harvest and full-tree chipping studies, tending and protection improvement programs, old growth, data systems and analytical methodologies, forest resource assessment policy, roadless wilderness areas policy, professional and technical training programs and district land use guidelines.

Subsection 3.5.5 Public Education on Forest Management addresses matters pertaining to public education on forest management.

3.5.1 Advisory Committees

The EA Board's decision provided for three advisory committees, in addition to Local Citizen Committees:

- a Regional Advisory Committee to provide advice on regional resource management;
- a Provincial Technical Committee to ensure that implementation manuals are kept current; and,
- a Provincial Policy Committee to advise on provincial level policies related to timber management.

3.5.1.1 Regional Advisory Committees

Current Requirements

T&C 4 and Appendix 1(C) required the establishment of a Regional Advisory Committee to act as both an advisory committee to MNR and as a sounding board for problems arising in the course of reaching regional resource management objectives and decisions. The committee was to be made up of a broad range of regionally based stakeholder groups.

T&C 4

(a) *The Ministry of Natural Resources shall establish a structure of committees to review, advise, guide and improve the timber management planning process and to increase the level of public input to and public scrutiny of timber management planning in the province.*

(ii)*At the regional level, MNR shall establish Regional Advisory Committees (RAC) to provide advice in translating provincial goals into regional objectives. These committees will also provide scrutiny to the progress in achieving management unit, district and regional objectives.*

Appendix 1: Committees

C: The Regional Advisory Committee

1. *Purpose*
   The purpose of the Regional Advisory Committee is to act as both an advisory committee to MNR and as a "sounding board" for problems arising in the course of reaching regional resource management objectives and decisions.
2. *Formation and Membership*
   (a) *Each Regional Advisory Committee shall be chaired by the appropriate MNR regional director, who will represent the Ministry.*
   (b) *Each regional director of the Ministry shall appoint, as members to the Regional Advisory Committee for the region, a regional representative of:*
      (i) *The Ontario Parks Council*
      (ii) *The Northern Ontario Tourist Outfitters Association*
      (iii) *The Ontario Federation of Anglers and Hunters*
      (iv) *The Ontario Forest Industries Association*
      (v) *The Ontario Lumber Manufacturers Association*
      (vi) *The Ontario Trappers Association*
      (vii) *Native Peoples Organizations*

(viii) Ontario Campers Association
(ix) The Ontario Federation of Naturalists and other environmental groups
(x) The Ontario Association of Chambers of Commerce
(xi) The Ontario Professional Foresters Association
(xii) The Ontario Association of Municipalities
(xiii) Forest Industry workers
(xiv) Trade unions
(xv) Other interest groups.

(c) Each regional director shall have the discretion to expand the Regional Advisory Committee membership to reflect a balance of local concerns.
(d) Each member of a Regional Advisory Committee shall serve for a three-year term.
(e) Each Regional Advisory Committee will be a standing committee which shall meet at least quarterly.
(f) The committee members shall receive expenses for their attendance at meetings.

3. Responsibilities
Each Regional Advisory Committee will be strongly supported by MNR, which will act as the secretariat and provide the necessary background information to do the following:
(a) Review provincial goals and policies as translated by MNR regional staff into numerically quantified regional objectives.
(b) Review background information for the timber resource and those resources which influence or are impacted by the management of the timber resource.
(c) Review the degree of success of past practices at a forest management unit level in order to determine whether regional objectives and targets are being met
(d) Provide guidance to the regional level of the MNR for the criteria applicable to Timber Management Plan approval.
(e) Provide input (in the form of either minutes and/or direct communication) to local forest management units in its region.

4. Jurisdiction
The geographic area of jurisdiction of each Regional Advisory Committee will be an existing region with boundary modification such that (to the extent possible) individual forest management units for timber and other resources be either "in" or "out" of the region.

Implementation Experience

In 1997, before Regional Advisory Committees were established, MNR created Round Tables in each of MNR's three administrative regions to recommend changes in land use to the Ontario government. The Round Tables were regional committees made up of citizens with a diverse range of interests, whose purpose was to advise the Minister of Natural Resources in the Lands for Life planning process. The Regional Advisory Committees were formed in 1999, after the Round Tables had completed their work, and in some cases the new Regional Advisory Committees include members of the former Round Tables.

Members of the Regional Advisory Committees come from a wide range of Crown land interests, generally from the groups or organizations listed in Appendix 1 C2 of the EA decision. Membership has varied from about 12 to 15 persons per committee. The geographic separation of committee members and the fact that they volunteer their services has made it difficult for these committees to meet regularly with full membership. In addition, MNR Regional Directors have found it difficult to schedule and chair these meetings on a quarterly basis.

The three Regional Advisory Committees are fulfilling their purpose as advisory committees to MNR and as sounding boards for reaching regional resource management objectives and decisions. The committees have discussed topics, such as:

- forest management planning objectives,
- background information on other resources that might be impacted by forest management (e.g., moose management objectives); and
- updates on aspects of MNR's core business.

One of the responsibilities of the Regional Advisory Committees was to play a role in reviewing numerically quantified regional objectives provided to them by MNR. This was based on the assumption that MNR would follow a 'top down' process of translating provincial level objectives and targets into regional and management unit level objectives and targets. This notion however, ran counter to MNR's management model of sustainability that flowed from the *Crown Forest Sustainability Act*. In other words, MNR took the 'bottom up' approach of determining sustainability at the management unit level, which meant objectives and targets for forest management were first set out in local forest management plans and were not assigned to the unit from regional or provincial levels. As a result of this bottom up approach, Regional Advisory Committees have not been asked to review numerically quantified regional objectives, and have focused their attention elsewhere.

For example, the Regional Advisory Committees have focused most of their attention on providing advice to the MNR Regional Director on forest management issues. They have also provided advice on such matters as Ontario Living Legacy signature sites. Regional Advisory Committees have also expressed concern that they not duplicate the role of Local Citizens Committees, and as a result, they have tried to avoid interfering with local advice provided to MNR District Managers.

MNR's compliance with the EA Approval in establishing the Regional Advisory Committees was challenged in 1996, during the *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* judicial review proceedings. The Court ruled that MNR had not established Regional Advisory Committees at the time of the judicial review. For more information on the judicial review proceedings, see Section 1.2.5.

Analysis of Implementation Experience

MNR is committed to maintaining the Regional Advisory Committees. The role of the committee is evolving and has focused on providing advice to MNR Regional Directors on regional forest management issues, more so than reviewing regional objectives. MNR believes that the future role of these committees should be to continue to provide advice to MNR Regional Directors on forest management and other related matters.

The effectiveness of the Regional Advisory Committees could be improved through a number of adjustments. For example, terms of appointment of committee members could be varied to suit individual needs rather than being a fixed term of three years; a co-chair could assist the MNR Regional Director in administering meetings; the MNR Regional Director could send a designate when unable to attend meetings; and the frequency of meetings could be adjusted to suit the needs of the committee and the issues for which advice is being sought.

With respect to regional representation by Native people's organizations, MNR proposes to change this to refer to Aboriginal organizations to be more inclusive.

Regional Advisory Committees have an important role to play in advising the MNR Regional Director on forest management planning matters. The above analysis suggests that the effectiveness of the committees can be improved by refining their role and providing the MNR

Regional Director with flexibility in seeking their advice on a broad range of forest management planning and related matters. MNR therefore recommends that T&C 4 and the associated Appendix 1 be amended.

Recommended Term and Condition

MNR recommends that the T&C 4 and Appendix 1 (C) be deleted and replaced with the following:

35. (a) The Ministry of Natural Resources shall maintain Regional Advisory Committees whose purpose is to advise the MNR Regional Director on forest management planning and related matters brought to the committee by the MNR Regional Director.

(b) Each Regional Advisory Committee shall be chaired by the appropriate MNR Regional Director; who will represent the Ministry. The MNR Regional Director may appoint a co-chair from among the committee members.

(c) Each MNR Regional Director shall seek a representative, where possible, from each of the following groups to appoint to the Regional Advisory Committee:

- **(i) The Ontario Parks Council**
- **(ii) The Northern Ontario Tourist Outfitters Association**
- **(iii) The Ontario Federation of Anglers and Hunters**
- **(iv) The Ontario Forest Industries Association**
- **(v) The Ontario Lumber Manufacturers Association**
- **(vi) Ontario Fur Managers Federation**
- **(vii) Aboriginal Organizations**
- **(viii) Ontario Campers Association**
- **(ix) The Federation of Ontario Naturalists and other environmental groups**
- **(x) The Ontario Association of Chambers of Commerce**
- **(xi) The Ontario Professional Foresters Association**
- **(xii) The Association of Municipalities of Ontario**
- **(xiii) Forest Industry workers**
- **(xiv) Trade unions**
- **(xv) Ontario Prospectors Association**
- **(xvi) Recreation trail organizations**
- **(xvii) Other interest groups**

(d) Each MNR Regional Director shall have the discretion to expand the Regional Advisory Committee membership to reflect a balance of regional concerns.

(e) Each Regional Advisory Committee will be supported by MNR, which will act as the secretariat.

(f) Terms of Reference will be provided by the appropriate MNR Regional Director for each Regional Advisory Committee and will include:

- **(i) term of appointment;**
- **(ii) frequency of meetings;**
- **(iii) roles of committee members;**
- **(iv) reimbursement of expenses for attendance at meetings;**
- **(v) operational procedures for the committee; and**
- **(vi) the geographic area associated with the committee.**

(g) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

3.5.1.2 Provincial Level Advisory Committees

Current Requirements

T&C 4 and 89 and Appendix 1(A) and (B) required the establishment of a Provincial Technical Committee to ensure that implementation manuals are kept current; and a Provincial Policy Committee to advise on provincial level policies related to timber management.

> ***T&C 4***
>
> *(a) The Ministry of Natural Resources shall establish a structure of committees to review, advise, guide and improve the timber management planning process and to increase the level of public input to and public scrutiny of timber management planning in the province.*
>
> *(iii) At the provincial level, a Provincial Technical Committee (PTC) shall be established. This committee will review and update technical guidelines, construction/operational manuals, and resource/environmental manuals related to the management of timber and non-timber resources (See condition 89)*
>
> *(iv) At the provincial level, a senior-level Provincial Policy Committee (PPC) shall be established. This committee will review and provide guidance on provincial resource management goals, objectives, targets, and strategies. It will also advise on the development of associated provincial policies to outline the broad goals of other ministries and of the government as a whole.*
>
> *(b) The composition and terms of reference of the senior Provincial Policy Committee, the Provincial Technical Committee, the Regional Advisory Committee and the Local Citizens Committee are described in Appendix 1.*

> ***T&C 89***
>
> *MNR shall establish the Provincial Technical Committee for Timber Management as a standing committee comprised of both government and non-government members. The purposes of the Committee are to ensure that implementation manuals are kept current in light of applicable scientific knowledge and advances in analytical and operational technology, and to set priorities for work on existing or new implementation manuals. The committee may include members of the public as well as persons with professional and technical resource management expertise and familiarity with the technical aspects of timber management. (See Condition 4(a)(iii) and Appendix 1, part B).*

> ***Appendix 1: Committees***
>
> *A: The Senior Provincial Policy Committee*
>
> *1. Purpose*
>
> *The purpose of the Provincial Policy Committee is to*
>
> *(a) review the appropriateness of policies at a provincial level for timber management as well as those resources which influence or are impacted by the management of the timber resources ("the policies");*
>
> *(b) review the funding levels of the policies;*
>
> *(c) determine the inter-relational effects of the policies; and*
>
> *(d) act as a standing Advisory Committee to MNR on the matters referred to in (a), (b) and (c).*
>
> *2. Formation*
>
> *(a) The Minister of Natural Resources shall appoint members to this committee and the Deputy Minister of Natural Resources will chair the committee.*
>
> *(b) The Minister of Natural Resources shall appoint members to this committee from industry associations, unions, chambers of commerce, recreation groups, environmental groups, native*

organizations, and other groups, as well as representatives of foresters, trappers, municipalities and other interested individuals.

- *(c) Individual members shall be appointed to this committee for a three year term with sufficient re-appointments for an annual turnover of one third of members commencing in the fourth year of the establishment of the committee.*
- *(d) The committee shall meet at least twice annually.*
- *(e) The committee shall keep minutes which shall be publicly available.*
- *(f) The committee members shall receive expenses for their attendance at meetings.*

B: The Provincial Technical Committee:

1. *Purpose The Provincial Technical Committee will:*
   - *(a) Ensure that implementation manuals are kept current in the light of advances in scientific knowledge and management practices.*
   - *(b) Act as a review board for proposed changes, emanating from either a field or a policy level to any implementation manual referred to in Appendix 7, and to set priorities for work on existing or new implementation manuals.Deal with any other matters identified by the deputy minister.*
2. *Formation and Membership*
   - *(a) The Deputy Minister of Natural Resources shall appoint members to this committee.*
   - *(b) One member will be appointed from each professional discipline required, in the opinion of MNR, for the management of the timber resource and of non-timber resources of the province.*
   - *(c) Where possible, membership shall include knowledgeable members of the public.*
   - *(d) The term of appointment of the committee members will be initially for a three-year period with a year-by-year renewal provision to be exercised at the discretion of MNR.*
3. *Responsibilities It is the responsibility of this committee to:*
   - *(a) Establish interdisciplinary teams as required to:*
     - *(i) Review results of monitoring programs;*
     - *(ii) Review individual implementation manuals;*
     - *(iii) Obtain input from recognized experts (both internal and external to MNR) during the review of the implementation manuals; and*
     - *(iv) To bring recommendations before the committee.*
   - *(b) bring to the Provincial Policy Committee proposed changes to guidelines and manuals with a supporting rationale for the proposed changes and an implementation strategy. The Policy Committee will give its advice to the minister.*
   - *(c) committee members shall receive expenses for their attendance at meetings.*

Implementation Experience

The Provincial Policy Committee and the Provincial Technical Committee were both established in 1995. They have been meeting regularly since 1997, when they were renamed the Provincial Forest Policy Committee and the Provincial Forest Technical Committee, respectively.

Originally, the Minister of Natural Resources appointed 18 members to the Provincial Forest Policy Committee and the Deputy Minister appointed 16 members to the Provincial Forest Technical Committee. Since then, memberships have been reduced to 12 and 11, respectively, to improve their effectiveness and efficiency.

The Provincial Forest Policy Committee has representation from MNR, non-government organizations, the forest industry, municipal government, the financial sector, labour and the academic community. Two sub-committees have been established to deal with specific topic areas: one to examine tenure and enhanced forest productivity options, and the other to provide advice on MNR's eighth-year review of the EA Approval.

MNR's compliance with the EA Approval in establishing the Provincial Forest Policy Committee and ensuring that it met at least twice annually was challenged in 1996 during the *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* judicial review proceedings. The Court ruled that MNR was not in compliance at the time but has met as required since then. For more information on the judicial review proceedings, see Section 1.2.5.

The Provincial Forest Technical Committee includes members from MNR, the forest industry, the academic community, and environmental and other non-government organizations. This committee has played an integral role in the guidance and priority setting with respect to MNR's implementation manuals and guidelines, including:

- the development of new guidelines;
- an assessment of the effectiveness of certain existing guidelines; and
- a comprehensive review of existing guidelines used in forest management.

In 2000, a comprehensive review by the Provincial Forest Technical Committee, supported by an independent consultant's report, resulted in recommendations for the consolidation of MNR's implementation manuals into a hierarchical approach for application. This will lead to the amalgamation of the more than 30 existing implementation manuals into a more concise set of documents. This hierarchical theme begins at the landscape level scale and progresses through to stand and site level scales.

Analysis of Implementation Experience

MNR's experience with the provincial level advisory committees has been a positive one. For example, the Provincial Forest Technical Committee has been instrumental in the discussions on changes in MNR's approach to forest management using implementation manuals. The Provincial Forest Policy Committee has been active in advising MNR on policy matters such as enhanced forest productivity and this Timber Class EA Review.

The requirement for a fixed, three-year term of appointment to the Provincial Forest Policy Committee has limited the willingness of volunteers to participate and has complicated the turnover in membership. The Provincial Forest Technical Committee, by contrast, is able to extend a member's term, and this kind of flexibility should also be available to the Provincial Forest Policy Committee. This would ensure maintenance of comprehensive knowledge and understanding within the committee.

Appendix 1B 3(b) requires the Provincial Forest Technical Committee to bring proposed changes to guidelines and manuals and the supporting rationale, to the Provincial Forest Policy Committee. MNR has found that the complex nature of the subjects reviewed by the Provincial Forest Technical Committee has required a high degree of professional and technical expertise and extensive ongoing interaction with MNR technical specialists.

Rather than reporting to the Provincial Forest Policy Committee, it would be more appropriate and effective to have the Provincial Forest Technical Committee provide technical advice and recommendations directly to MNR and refer only policy matters to the Provincial Forest Policy Committee.

MNR has found that the limited, volunteer time of Provincial Forest Policy Committee members is best spent addressing the matters associated with MNR forest policy. However, the direction set out in T&C 4 goes beyond forest policy to include advising on the broad goals of other ministries and of the government as a whole. It seems more appropriate for this committee to focus on forest policy given the widespread use of volunteer groups by government in general.

Despite these challenges, these two provincial level advisory committees have been effective and their work should continue.

The purpose, composition and terms of reference of the Provincial Forest Technical Committee are described in T&C 4 and Appendix 1B. Further direction for the committee is provided in T&C 93. Therefore, MNR recommends only minor changes to T&C 4 and 89 to clarify roles and increase membership flexibility.

Recommended Terms and Conditions

MNR recommends that T&C 4, 89 and Appendix 1(A&B) be deleted and replaced with the following:

Provincial Forest Policy Committee

36. (a) The Ministry of Natural Resources shall maintain a Provincial Forest Policy Committee to advise the MNR Deputy Minister on provincial forest policy and other related matters brought to the committee by the MNR Deputy Minister.

(b) The Minister of Natural Resources shall appoint members to this committee and the committee shall be chaired by the MNR Deputy Minister.

(c) The Provincial Forest Policy Committee will be supported by MNR, which will act as the secretariat.

(d) Terms of Reference for the Provincial Forest Policy Committee will be provided by the MNR Deputy Minister and will include:

- **(i) membership;**
- **(ii) term of appointment;**
- **(iii) frequency of meetings;**
- **(iv) roles of committee members;**
- **(v) reimbursement of expenses for attendance at meetings; and**
- **(vi) operational procedures for the committee.**

(e) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

Provincial Forest Technical Committee

37. (a) The Ministry of Natural Resources shall maintain a Provincial Forest Technical Committee to advise the MNR Assistant Deputy Minister, Forests Division, on ensuring implementation manuals (guides) are kept current in respect of scientific knowledge and management practices, by acting as a review board for proposed changes and recommending priorities for work on new or existing implementation manuals (guides). The committee may also advise on other technical matters brought to the committee by the MNR Assistant Deputy Minister, Forests Division.

(b) The MNR Deputy Minister shall appoint members to this committee and the committee shall be chaired by the MNR Assistant Deputy Minister, Forests Division.

(c) The Provincial Forest Technical Committee will be supported by MNR, which will act as the secretariat.

(d) Terms of Reference will be provided by the MNR Assistant Deputy Minister, Forests Division for the Provincial Forest Technical Committee and will include:

- **(i) membership;**
- **(ii) term of appointment;**
- **(iii) frequency of meetings;**
- **(iv) roles of committee members;**
- **(v) reimbursement of expenses for attendance at meetings; and**
- **(vi) operational procedures for the committee.**

(e) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

3.5.2 Implementation Manuals

3.5.2.1 Implementation Manuals Review and Revision

Current Requirements

The EA Board recognized implementation manuals as guidelines "…to direct and guide MNR and the industry's foresters and other professional and technical management staff in carrying out timber management planning" (Koven and Martel 1994, Page 285). They provide guidance and direction in a way that allows for consistency and accountability in decisions made by forest managers. They are intended to provide a source of relevant scientific information and are required to be regularly reviewed and updated by qualified people. The Provincial Forest Technical Committee, referred to in Section 3.5.1.2, is to have an integral role in reviewing the manuals and in setting priorities for manual revision, amalgamation or creation. The implementation manuals that were considered part of the timber management planning process and therefore applicable to T&C 93 were listed in Appendix 7 in the EA Approval.

The EA Board required in T&C 20 that updated implementation manuals be used in the planning and implementation of timber management activities.

MNR is required to update the Code of Practice for Timber Management Operations in Riparian Areas (MNR 1998c) to ensure that specified trails were recognized and for MNR to consult on their identification as described in T&C 76.

T&C 94 required MNR to revise existing silvicultural guides, produce new implementation manuals and to undertake a review of implementation manuals with the assistance of the Provincial Forest Technical Committee.

T&C 20

(a) MNR's approved implementation manuals, as updated in accordance with Condition 93 shall be used in the planning and implementation of timber management activities. These implementation manuals include provincial guidelines and construction/operational manuals, the use of which is mandatory in timber management. The implementation manuals also include resource/environmental manuals, which are used in the development of timber management strategies and prescriptions for the specific values addressed in those manuals when those values are at risk or are featured for management on the forest management unit.
(b) Implementation manuals are listed in Appendix 7

T&C 76

MNR shall provide in the Code of Practice for Timber Management Operations in Riparian Areas, that operators ensure that trails used for accessing and working traplines, and portage routes used for recreational purposes be rehabilitated and unobstructed following timber operations. MNR and operators shall consult with affected trappers and recreationists prior to operations in order to identify such trails and portages.

T&C 93

(a) Within five years of this approval, and thereafter at least every five years, MNR shall review each implementation manual to determine the need for revision or amalgamation of the existing manuals or preparation of any new manuals. The Provincial Technical Committee shall have an integral role in the review of existing implementation manuals, and the setting of priorities for revision or amalgamation of the existing manuals or preparation of any new manuals which may be required from time to time

(b) Any revision or amalgamation of the existing implementation manuals, or preparation of any new manuals shall be undertaken by suitably qualified persons.

(c) The intent of the review of the manuals is to ensure that they reflect current scientific knowledge as it applies to Ontario. In considering the need for revisions, amalgamations or new manuals, in setting priorities, and in determining the appropriate contents of the manuals, the following factors shall be considered:
  - *(i) The results of applicable scientific research;*
  - *(ii) The results of monitoring programs described in Conditions 55, and 78-84;*
  - *(iii) The advantages and disadvantages of changes to current timber management practices; and*
  - *(iv) Advances in analytical and operational technology.*

(d) Where existing manuals are revised or amalgamated, or new manuals are prepared, draft manuals shall be subject to review by appropriate government ministries and agencies, known provincial organizations and associations with expertise in the subject matter, and representatives of Local Citizens Committees prior to finalization and approval by MNR.

1

T&C 94

(a) In accordance with the foregoing procedure, all existing silvicultural guides shall be reviewed to ensure that they reflect current scientific knowledge as it applies to Ontario, and revised to provide descriptions of general standard site types for use in developing Silvicultural Ground Rules in Timber Management Plans. Those revisions shall be completed within three years of this approval.

(b) MNR shall produce a new implementation manual to address operational considerations for the activities of harvest, renewal and maintenance with the specific purpose of addressing protection of the physical environment, and to provide direction in relation to harvest layout, configuration and clearcut sizes. For the purposes of these terms and conditions, the working title of this implementation manual is "Environmental Guidelines for Timber Management".

(c) MNR shall produce Timber Management Guidelines for the Provision of Pine Marten Habitat and Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat. These guidelines shall be prepared and implemented within two years of this approval.

(d) MNR shall undertake, with the assistance of the Provincial Technical Committee, the preparation and completion of a mixed wood silvicultural guide.

2

Appendix 7: Implementation Manuals For Timber Management

Implementation manuals include the following provincial guidelines, construction/operational manuals and resource/environmental manuals:

(a) Provincial guidelines:
  - *(i) A Silvicultural Guide to the Jack Pine Working Group in Ontario, 1986*
  - *(ii) A Silvicultural Guide to the Spruce Working Group, 1988*
  - *(iii) A Silvicultural Guide to the Poplar Working Group, 1989*
  - *(iv) A Silvicultural Guide for the Tolerant Hardwoods Working Group in Ontario, 1990*
  - *(v) A Silvicultural Guide for the White Pine and Red Pine Working Groups in Ontario, 1990*
  - *(vi) A Silvicultural Guide for the Mixed Wood Working Group (pursuant to Condition 94(d))*
  - *(vii) Timber Management Guidelines for the Protection of Tourism Values, 1986*
  - *(viii) Timber Management Guidelines for the Provision of Moose Habitat, 1988*
  - *(ix) Timber Management Guidelines for the Protection of Fish Habitat, 1988*
  - *(x) Timber Management Guidelines for the Provision of White-tailed Deer Habitat (in*

preparation)

  - (xi) *Timber Management Guidelines for the Protection of Cultural Heritage Resources, 1991*
  - (xii) *Timber Management Guidelines for the Provision of Pine Marten Habitat (pursuant to Condition 94(c))*
  - (xiii) *Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat (pursuant to Condition 94(c))*
  - (xiv) *Environmental Guidelines for Timber Management Activities (pursuant to Condition 94(b))*
- (b) *Construction/operational manuals:*
  - (i) *Aerial Spraying for Forest Management - an Operational Manual, 1981 (Note: applies to MNR only)*
  - (ii) *Resource Access Roads Policy and Implementation Strategies and Guidelines, 1985*
  - (iii) *Prescribed Burn Planning Manual, 1988*
  - (iv) *Environmental Guidelines for Access Roads and Water Crossings, 1988*
  - (v) *Code of Practice for Timber Management Operations in Riparian Areas, 1991.*
- (c) *Resource/environmental manuals:*
  - (i) *Management Guidelines and Recommendations for Osprey in Ontario, June 1983*
  - (ii) *Habitat Management for Ontario's Forest Nesting Accipiters, Buteos, and Eagles, March 1984*
  - (iii) *Habitat Management Guidelines for Cavity-Nesting Birds in Ontario, March 1984*
  - (iv) *Management Guidelines for the Protection of Heronries in Ontario, 1984*
  - (v) *Habitat Management Guidelines for Warblers of Ontario's Northern Coniferous Forests, Mixed Forests or Southern Hardwood Forests, March 1984*
  - (vi) *Habitat Management Guidelines for Bats of Ontario, August 1984*
  - (vii) *Habitat Management Guidelines for Birds of Ontario Wetlands Including Marshes, Swamps, and Fens or Bogs of Various Types (excluding waterfowl), March 1985*
  - (viii) *Bald Eagle Habitat Management Guidelines, June 1987*
  - (ix) *Golden Eagle Habitat Management Guidelines, November 1987*
  - (x) *Peregrine Falcon Habitat Management Guidelines, December 1987*
  - (xi) *Guidelines for Providing Furbearer Habitat in Timber Management (in preparation)*
  - (xii) *Habitat Management Guidelines for Woodland Caribou (in preparation)*
  - (xiii) *Habitat Management Guidelines for Waterfowl in Ontario (in preparation).*
  - (xiv) *Hawk Guide for MNR Field Personnel, 1991*

Implementation Experience

MNR's implementation experience related to the review, revision, and preparation of implementation manuals is outlined in the following four sections.

Use of Implementation Manuals in Planning

As required by T&C 20, MNR's implementation manuals, as listed in Appendix 7 in the EA decision, have been used as required during the development and implementation of forest management plans.

During the term of this EA Approval, the *Crown Forest Sustainability Act* has taken effect and that Act includes provisions for a regulated manual, the Forest Operations and Silviculture Manual (MNR 2000f). That manual describes the standards and practices to be used in planning and conducting forest operations. Those standards and practices are documented in a variety of forms including guidelines, manuals and guides. All forest operations planned and implemented on Crown land in Ontario must be in compliance with this manual and the FMP Manual. This gave further emphasis to the EA Board's direction that all implementation manuals be considered in carrying out forest operations.

The Forest Operations and Silviculture Manual addresses all guidelines, manuals and guides and is periodically revised to reflect recent advances in guide development. In addition, new and revised guidelines are made available to the public as they are developed either in hard copy or in electronic versions available on MNR's web site.

In addition to the direction provided by the FMP Manual, recently revised implementation manuals contain specific guidance on the application of the direction provided in that manual. As part of annual training for forest management planning teams, the content and use of implementation manuals is addressed, with emphasis on new or recently revised guides.

Implementation Manual Review

The requirement of T&C 93 for MNR to undertake a review of each implementation manual by suitably qualified persons was completed by 1999. The Provincial Forest Technical Committee has had an integral role in the periodic review of the forest management implementation manuals, including guidelines, and in setting priorities for revision, amalgamation and preparation of new manuals. While committee members may be involved in a review, most often reviews are conducted by individuals outside the committee who have the necessary qualifications, expertise and experience. MNR staff form the core of this team, with people from other ministries, agencies and institutions included where appropriate.

In undertaking these reviews, the currency of scientific knowledge on which the guideline is based and the results of relevant monitoring programs are considered. These reviews also consider the advantages and disadvantages of proposed changes on timber management practices and technological advances. The results of these reviews are considered in setting priorities for subsequent revisions, amalgamations or the development of new guides.

Since this initial review, the efficient and effective application of implementation manuals continued to receive considerable attention from practitioners and stakeholders. As a result, in 1999, MNR undertook an independent review of forest management guides as described later in this section.

Implementation Manual Revision, Amalgamation and Preparation

When revising, amalgamating or writing a new implementation manual, a writing team is assembled which includes MNR staff, and depending on the nature of the implementation manual, may also include technical experts from outside MNR. Members of the Provincial Forest Technical Committee identify potential members for the writing team. Members of the writing team consult with selected individuals with recognized expertise in the subject of the implementation manual, and appropriate members from the Provincial Forest Technical Committee when creating a draft. The Provincial Forest Technical Committee reviews all drafts before broader peer review.

Peer review of draft material is done by MNR staff and representatives from the forest industry, environmental non-government organizations, appropriate government ministries and agencies, other interested and affected parties, and members from Local Citizens Committees. Other public consultation forums may also take place (e.g. workshops), and public comments are considered in the finalization of the guide. The final draft is submitted to the Provincial Forest Technical Committee for review, and in some cases, submitted to the Provincial Forest Policy Committee for comment or for information. Subject to the *Environmental Bill of Rights* requirements, appropriate posting of notices of proposed draft implementation manuals and decision notices occurs on the Environmental Registry.

T&C 94 required the production of, or revision to, several implementation manuals, some within a specific timeframe, which influenced the priority setting for implementation manual review and revision.

The first priority was T&C 94(c), which required the development of new featured species guidelines for marten and pileated woodpecker habitat within two years of the EA Approval. Both the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat and the Forest Management Guidelines for the Provision of Marten Habitat were approved in May 1996. Pre-publication copies of the guidelines were provided to some MNR and forest industry staff who were currently engaged in forest management planning. The published copies of the guidelines were released in the autumn of 1996. Stand level aspects of the guidelines were implemented in all management units for the 1997/1998 operating year through Annual Work Schedules. Landscape level direction was to be incorporated through the preparation and renewal of subsequent FMPs.

MNR had interpreted the T&C to require the guidelines be completed by May 1996 and implemented through the normal schedule of FMP renewals. The Divisional Court in *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* concluded that 'implemented' meant that the requirements of the guidelines had to be implemented on the ground by May 1996 with respect to the three forest management plans at issue in the legal proceedings. In responding to the court ruling, MNR undertook a renewal of the FMPs at issue following an expedited timeframe to include all of the direction in the marten and pileated woodpecker habitat guidelines. All forest management plans initiated since the fall of 1996 have been prepared using the guidelines. By 2002, the guidelines will have been implemented at both planning (i.e., landscape) and operational (i.e., stand) levels in all forest management plans as required.

T&C 94 (a) required the review and revision of all five existing silvicultural guides within three years of the EA Approval. MNR concluded that ecosites developed by the Ecological Land Classification (refer to T&C 97 in Section 5.0 Progress Reports) were to be the general standard site types for the silvicultural guides. Following this ecosystem approach, the new silvicultural guides were organized to reflect the forest regions within the Area of the Undertaking. All of the guides were structured around the use of ecosites, also known as site types in MNR's Northeastern Region, as the general standard site types.

The three existing silvicultural guides for the jack pine, spruce and poplar working groups, were amalgamated into a single guide which addresses management of these species in the boreal forest region, titled A Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario (MNR 1997b). The existing tolerant hardwood silvicultural guide was revised as a separate document titled A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario (MNR 1998d). The red and white pine silvicultural guide was expanded to include all conifer species in the Great Lakes-St. Lawrence forest region and named A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario (MNR 1998e). The use of experts in the development and review of the guides ensured the revised guides reflected the most recent science and successful forest management techniques, as well as being a practical guide for use by forest management planners and field staff. Version 1.0 of the three new silvicultural guides was completed in May 1997 and Version 1.1 of the guides was published in 1997 and 1998.

T&C 94(d) required MNR to prepare a mixedwood silvicultural guide with the assistance of the Provincial Forest Technical Committee. Due to the complexity of this forest type, MNR has taken a different approach to providing guidance for boreal mixedwood silviculture, consisting of a series of 'notes' for forest managers. MNR has published 23 Boreal Mixedwood Notes (MNR 2000g) to provide the scientific background and context for this forest type and is continuing work on 25 additional notes. This approach of providing notes to practitioners has been beneficial since they receive technical direction during the time the guide was under development. These notes will provide the scientific background and context for the information to be included in the boreal mixedwood silvicultural guide. The writing team is working to produce a draft of the new silvicultural guide for the fall of 2002, with completion of the final document in spring 2003.

T&C 94 (b) required the development of an implementation manual to address forest management operational considerations related to the protection of the physical environment and to provide direction in relation to harvest layout, configuration, and clearcut size. MNR developed the implementation manual in two parts. The first part, the Forest Management Guidelines for the Protection of the Physical Environment (Archibald et al. 1997), was released in 1997. This guideline was prepared to help resource managers prevent, minimize, or mitigate adverse effects on the physical environment when planning and conducting forest operations. The second part, the Forest Management Guide for Natural Disturbance Pattern Emulation, is discussed in Section 3.5.2.2.

In 1998 MNR wrote an addendum to the Code of Practice for Timber Management Operations in Riparian Areas. The addendum was consistent with T&C 76, which provided direction to operators to ensure trails used for accessing and working traplines, and portage routes used for recreational purposes, be rehabilitated and left unobstructed following forest operations. It required MNR to consult with affected trappers and recreationists prior to forest operations to identify trails and portages. This addendum has been included on MNR's electronic Internet version of the Code of Practice for Timber Management Operations in Riparian Areas. This subject matter is also addressed in the Forest Operations and Silvicultural Manual.

During the term of the EA Approval, work on other implementation manuals not identified in T&C 94 continued. For example, the Timber Management Guidelines for the Protection of Tourism Values was replaced by the Management Guidelines for Forestry and Resource-Based Tourism (MNR 2001i) in 2001. The Forest Management Guidelines for the Provision of White-tailed Deer Habitat (Voigt et al. 1997) and the Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach (for use in northwestern Ontario) (Racey et al 1999), which were in preparation at the time of the EA hearings, were finalized in 1997 and 2001 respectively. Based on the results of the guideline effectiveness monitoring research referred to in T&C 80 (Section 3.2.2.4), work is underway to revise the Timber Management Guidelines for the Provision of Moose Habitat and the Timber Management Guidelines for the Protection of Fish Habitat.

Independent Review of Forest Management Guides

The use of implementation manuals has evolved over the last 25 years, as has the knowledge of forest management. New guidelines have been developed to address specific issues as they arise, adding to the number of guidelines over time. Forest management planning teams now have more than 30 implementation manuals to consider as they prepare and implement their plans.

This has resulted in a set of guidelines that in some cases, reflects outdated philosophies with considerable overlap, some gaps and many inconsistencies. As a whole, the set of documents is seen as being cumbersome and inefficient to use, and appear at times to be unrelated to the values they were intended to protect. The complexity of balancing the different, sometimes contradictory, direction in the many guidelines has created planning and implementation issues and a lack of integrated direction. Using the guidelines in their current form is a time-consuming and inefficient process (Arborvitae Environmental Services Ltd., et al. 2000, Page xi). The forest industry is concerned that too much wood is unavailable for harvest as a result of the overly conservative and overlapping guidelines, while the environmental community is concerned that some values may not be receiving the protection they deserve.

After considerable discussion by the Provincial Forest Technical Committee on how best to address these viewpoints and concerns, a review of all the forest management implementation manuals to examine ways to improve their efficiency and effectiveness, reduce redundancy, and address practitioner concerns that there are too many guidelines, was initiated. This followed the announcement in 1999 of Ontario's Living Legacy: Land Use Strategy and the subsequent signing of the Ontario Forest Accord, which also indicated the need for an expeditious, transparent and independent review of the forest management guidelines.

A consultant group completed a comprehensive guideline review and submitted the report, Review of Forest Management Guides (Arborvitae Environmental Services Ltd., et al. 2000) to the Provincial Forest Technical Committee. The main recommendation, endorsed by the committee, was the amalgamation and condensation of the 34 guidelines reviewed into a more concise set of documents. This smaller number of guides would be based on a hierarchical theme, beginning at the landscape scale and progressing through stand and site scales, similar to how a forest management planning team would prepare a plan. The report suggested that this re-organization of guidelines "will facilitate the application of sustainable forest management, modifications to account for new knowledge or values… and readily support the planning process…Reorganizing the guides will reduce the number of the guides, and the complexity of applying them" (Arborvitae Environmental Services Ltd., et al. 2000, Page xi). The hierarchical approach will also enable the new set of guides to incorporate the ecologically-based 'coarse filter/fine filter' approach to wildlife habitat management, a more current approach than using featured species. Implementing the recommendations of the review will take some time, but will result in a new and improved direction in the use of implementation manuals. They will be fewer in number, organized and applied in a hierarchical fashion, ecologically-based and easier to use.

Analysis of Implementation Experience

Working with the Provincial Forest Technical Committee in reviewing existing implementation manuals, in setting priorities for revision and amalgamation of existing manuals, preparing new manuals and in reviewing draft manuals as they are produced, has been very positive.

The independent forest management guide review project confirmed many of the concerns expressed by practitioners and stakeholders, and offered reasonable recommendations to improve the present guideline approach to forest management. The key recommendations from this review project were supported by the Provincial Forest Technical Committee.

Continually creating new documents to address specific values or concerns is inefficient and may not provide the protection desired or required by the value. MNR is planning on re-organizing and amalgamating the current set of implementation manuals into a smaller number of forest management guides. Rather than producing individual documents on each topic or wildlife species, the new set of guides will be organized in a hierarchical manner based on spatial scale. This approach will make the guides easier to use, since it will parallel the thought process used by forest management planning teams. The hierarchical approach will also enable MNR to replace the present featured species approach to wildlife habitat management with the more current and ecologically-based coarse filter / fine filter method of creating or protecting wildlife habitat.

The consultants conducting the independent guide review also found the use of the words implementation manual, guideline and guide to be confusing, since they were sometimes used synonymously and sometimes not. They recommended, and MNR has accepted and already begun to use, the following terminology and definitions:

guide:	a document containing direction
standard:	a component of a guide that provides mandatory direction
guideline:	a component of a guide that provides mandatory direction requiring professional judgement and local interpretation during its application

The term 'implementation manual' will be replaced with the single word 'guide'. Standards and guidelines will be clearly identified within each new guide.

The amalgamation and re-organization of the current forest management guides will negate the need to classify the documents following the three categories used in the past (i.e., provincial, construction / operational, resource / environmental). Classification was previously required to identify where or how the guides were to be used across the province in the preparation of forest management plans. To meet MNR's forest ecosystem management and biodiversity objectives, and by using the coarse filter / fine filter approach to habitat management, all of the direction in the new set of guides will likely apply throughout the province. If there is some specific direction in a particular guide that is to be applied in only a portion of the province, or under certain circumstances, then this will be clearly identified in the guide.

The timing of forest management guide production versus subsequent implementation has been a learning experience for MNR. Expectations as to the timing of 'approval' versus 'implementation' can differ, as was experienced with the marten and pileated woodpecker habitat guidelines. MNR believes that the implementation of newly approved guides needs to occur in a manner that recognizes the provincial schedule for the preparation of forest management plans, thus requiring a phased in application. All new guides will detail the implementation schedule for the standards and guidelines to ensure clear direction is provided to forest practitioners. As a general rule, new guides will be implemented as new plans are created.

Since the release of the EA decision, the posting of notices of proposed and final decisions on forest management guides on the *Environmental Bill of Rights* Environmental Registry has become common practice. The use of the Environmental Registry is very helpful in obtaining input from stakeholders and the general public. Also, MNR's Internet web site has proven very valuable in distributing material quickly and efficiently to the public.

It takes a significant amount of time to review, revise, amalgamate, and produce some guides, especially those with a high degree of public and stakeholder interest. As such, adherence to strict time frames can sometimes be impractical and may not result in better forest management direction. Also, there will be a transition period required to move from the current array of guidelines to a more condensed set of guides. The continued involvement of the Provincial Forest Technical Committee will help ensure the creation of high quality guides in an open, timely, and transparent manner. There also needs to be recognition of the volunteer nature of advisory committees, which can present difficulties when trying to adhere to time frames.

Technical experts from outside MNR, including those employed by key stakeholder groups, have provided important advice during the development of guides. Local Citizens Committees, however, tend to focus on operational issues of interest to their local area. The technical capability and interest of each Local Citizens Committee, relative to a particular guide, varies across the province. MNR does welcome any comments from interested Local Citizen Committee representatives but believes the level of review in guide development should be left to their own discretion.

Table 4 includes the current list of forest management guides. MNR believes the Provincial Forest Technical Committee should continue to play a strong advisory role in revising, adding to, amalgamating, deleting or categorizing these guides as required by advances in our understanding of sustainable forest ecosystem management. As a result, the list of guides in Table 4 will change over time. The most recent version of each guide will be placed on MNR's Internet web site, providing a single location to house this updated list, and to provide practitioners, stakeholders and the public with easy access to electronic and paper copies of the guides. The Forest Operations and Silviculture Manual will be updated periodically to reflect the changes in the set of forest management guides as they continue to evolve.

Table 4. Forest Management Guides (as of July 17, 2002)

Provincial Guidelines

1. A Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Ecosites in Ontario (MNR 1997b)
2. A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario (MNR 1998c)
3. A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario (MNR 1998d)
4. A Silvicultural Guide to Managing Southern Ontario Forests (MNR 2000h)
5. A Silvicultural Guide for the Boreal Mixedwood Forest in Ontario (in preparation)
6. A Tree-Marking Guide for the Tolerant Hardwoods Working Group in Ontario (Anderson and Rice 1993)
7. Boreal Mixedwood Notes (MNR 2000g)
8. Management Guidelines for Forestry and Resource-Based Tourism (MNR 2001g)
9. Timber Management Guidelines for the Provision of Moose Habitat (MNR 1988b)
10. Timber Management Guidelines for the Protection of Fish Habitat (MNR 1988a)
11. Forest Management Guidelines for the Provision of White-tailed Deer Habitat (Voigt et al 1997)
12. Timber Management Guidelines for the Protection of Cultural Heritage Resources (MNR 1991a)
13. Forest Management Guidelines for the Provision of Marten Habitat (Watt et al.1996)
14. Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat (Naylor et al. 1996)
15. Forest Management Guidelines for the Protection of the Physical Environment (Archibald et al. 1997)
16. Forest Management Guide for Natural Disturbance Pattern Emulation (MNR 2001b)

Construction/Operational Manuals

1. Aerial Spraying for Forest Management (MNR 1991b) (applies to MNR only, although contains advice relevant to anyone conducting an aerial pesticide spray program)
2. Access Roads Manual (MNR 1992a)
3. Prescribed Burn Planning Manual (MNR 1997a)
4. Environmental Guidelines for Access Roads and Water Crossings (MNR 1990a)
5. Code of Practice for Timber Management Operations in Riparian Areas (MNR 1998c)

Resource/Environmental Manuals

1. Management Guidelines and Recommendations for Osprey in Ontario (Penak 1983)
2. Habitat Management for Ontario's Forest Nesting Accipiters, Buteos, and Eagles (James 1984a)
3. Habitat Management Guidelines for Cavity-Nesting Birds in Ontario (James 1984)
4. Management Guidelines for the Protection of Heronries in Ontario (Bowman and Siderius 1984)
5. Habitat Management Guidelines for Warblers of Ontario's Northern Coniferous Forests, Mixed Forests or Southern Hardwood Forests (James 1984b)
6. Habitat Management Guidelines for Bats of Ontario (Gerson 1984)
7. Habitat Management Guidelines for Birds of Ontario Wetlands Including Marshes, Swamps, and Fens or Bogs of Various Types (excluding waterfowl) (James 1985c)
8. Bald Eagle Habitat Management Guidelines (MNR 1987c)
9. Golden Eagle Habitat Management Guidelines (MNR 1987d)
10. Peregrine Falcon Habitat Management Guidelines (MNR 1987e)
11. Guidelines for Providing Furbearer Habitat in Timber Management (MNR 1986)
12. Habitat Management Guidelines for Waterfowl in Ontario (Hickie 1985)
13. Forest Raptors: Their Nests in Central Ontario (Szuba and Naylor 1998)
14. Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach (Racey et al. 1999)
15. Selected Wildlife and Habitat Features: Inventory Manual (Ranta 1998)

MNR has fulfilled its requirements to review, produce and revise the forest management guides (implementation manuals) as was required by the EA Approval. MNR will continue to seek participation and advice from the public, the forest industry, other governments and agencies and stakeholders to refine and improve its guides. In light of its accomplishments in meeting the terms and conditions relating to guides and the need to continue to refine and improve the role of guides in forest management, MNR proposes a number of amendments to the following terms and conditions:

For a discussion of T&C 27 (a)(b) and 94(b), see Section 3.5.2.2.

MNR submits that the requirements for T&C 94(a) and (c) have been met, and that the requirements of T&C 94(d) will be met before the expiry of the EA Approval. Therefore, the T&Cs 94 (a), (c) and (d) are no longer required.

MNR also submits T&C 76 has been met through the addendum to the Code of Practice for Timber Management Operations in Riparian Areas and by the FMP Manual requirements to consult with trappers and recreationists, and is no longer required.

The integral role of the Provincial Forest Technical Committee in the review, revision, amalgamation, categorization and preparation of new and existing guides will continue. Given the shift in the forest management guide approach to forest management, the continued role of the advisory committee, and the close linkages between guide implementation and guide effectiveness monitoring, MNR submits the wording of T&C 93 be amended. MNR also submits that T&C 20 be amalgamated with T&C 93.

Recommended Term and Condition

MNR recommends that T&C 20 and 93, and Appendix 7 be deleted and replaced with the following:

38. (a) MNR's approved forest management guides, as updated in accordance with (b) to (e) of this term and condition, shall be used in the planning and implementation of forest management activities. The application and use of new guides and the direction they contain will be specified within the new guides and the Forest Operations and Silviculture Manual.

(b) MNR shall maintain a list of current forest management guides and post this list, along with the most recent version of each guide, on its Internet web site. With the advice of the Provincial Forest Technical Committee, MNR may update the list as required, subject to any revision, amalgamation, categorization or preparation of new or existing guides.

(c) Within five years of the approval of a guide, and thereafter at least every five years, MNR shall review each guide to determine the need for revision or amalgamation of the existing guide or preparation of any new guides. The Provincial Forest Technical Committee shall have an integral role in the review of existing guides, and the setting of priorities for the revision of existing guides; or amalgamation with other guides; or the preparation of any new guides that may be required from time to time.

(d) The intent of the review of the guides is to ensure that they reflect current scientific knowledge as it applies to Ontario. In considering the need for revisions, amalgamations, or new guides, in setting priorities, and in determining the appropriate contents of the guides, the following factors shall be considered:

- **(i) the results of applicable scientific research;**
- **(ii) the results of relevant and appropriate monitoring programs;**
- **(iii) the advantages and disadvantages of changes to current forest management practices; and**
- **(iv) advances in analytical and operational technology.**

(e) Where feasible, and with the advice of the Provincial Forest Technical Committee, proposed new or revised guides or their components, should be pilot tested to assess their effectiveness and their efficiency in application prior to approval for implementation.

(f) Where existing guides are revised or amalgamated, or new guides are prepared, draft guides shall be subject to review by appropriate government ministries and agencies, known provincial organizations and associations with expertise in the subject matter, as well as members of the public through *the Environmental Bill of Rights* Environmental Registry prior to finalization and approval by MNR.

3.5.2.2 Emulating Natural Disturbance Patterns

Current Requirements

During the EA hearings, many issues were raised about clearcutting, but clearcut size received the most attention. Based on the evidence, the EA Board concluded that "…clearcutting is an acceptable timber management practice, particularly for the boreal forest" (Koven and Martel 1994, Page 159) and that "…clearcuts should be made in a range of sizes to emulate natural disturbances, and that - although extremely large clearcuts would likely be rare for practical reasons - limiting clearcuts strictly to small sizes would make it impossible to regenerate the boreal forest to its natural pattern of large even-aged stands" (Koven and Martel 1994, Page 162).

The EA Board required, through T&C 27(a) and (b) and T&C 94(b), MNR to implement a restriction on clearcut harvesting requiring a range of clearcuts and to develop implementation manuals and direction for use in planning.

T&C 27(a) (b)

MNR shall implement a restriction on clearcut harvesting requiring a range of sizes of clearcuts not to exceed 260 hectares. MNR shall also develop standards for configuration and contiguity of clearcuts which will ensure that the purpose of this restriction is not frustrated.

- *(a) These restrictions and standards shall be incorporated into the Environmental Guidelines for Timber Management Activities specified in Condition 94(b).*
- *(b) Silvicultural Ground Rules shall be prepared with the objective of ensuring that clearcuts are planned to a range of sizes and not consistently approach or meet the permitted maximum. Where for sound biological or silvicultural reasons individual or contiguous clearcuts exceed 260 hectares, they shall be recorded in the Plan as an exception to this condition, with reasons provided.*

T&C 94(b)

MNR shall produce a new implementation manual to address operational considerations for the activities of harvest, renewal and maintenance with the specific purpose of addressing protection of the physical environment, and to provide direction in relation to harvest layout, configuration and clearcut sizes. For the purposes of these terms and conditions, the working title of this implementation manual is "Environmental Guidelines for Timber Management".

Implementation Experience

In addition to the direction in the EA Board's decision, the approach to establishing clearcut size follows the *Crown Forest Sustainability Act* principle that forest practices should, within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns [*Crown Forest Sustainability Act* 1994, Section 2(3)(2)]. This principle is implemented through the FMP Manual, which requires FMPs to demonstrate that the frequency distribution of clearcuts and wildfire sizes shows movement towards natural disturbance patterns (MNR 1996a, Page A63).

Several MNR implementation manuals provide information, direction and rationale for establishing clearcut sizes and patterns under different circumstances. For example, the Timber Management Guidelines for the Provision of Moose Habitat and the Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach (Racey et al 1999) provide important habitat information. In northwestern Ontario, in locations where significant woodland caribou populations occur, application of the caribou habitat guidelines takes precedence over the moose habitat guidelines for determination of clearcut size. The caribou habitat guidelines suggest that, if timber harvesting is to occur in an area, one of the means of creating future winter habitat for caribou is through prescribing large disturbance events. By comparison, the Forest Management Guidelines for the Provision of White-tailed Deer Habitat supports the need for small harvest blocks in deer yarding areas.

In addition to producing various habitat guidelines, MNR examined historical fire records and produced the Forest Management Guidelines for the Emulation of Fire Disturbance Patterns Analysis Results (MNR 1997c). This document contained information on the disturbance area and frequency of fires ranging in size from 10 to 10,000 hectares. Many planning teams used this analysis in preparing FMPs.

The EA Board stated that perhaps the only area of agreement among the parties at the EA hearings was "…the difficulty of defining exactly what should be considered a clearcut" (Koven and Martel 1994, Page 159). In 1999, MNR released a technical note, Defining A Clearcut (MNR 1999d), that provided interim direction on how to determine clearcut size. The technical note required forest managers to include all adjacent harvested areas younger than 20 years and separated by less than 200 metres in the determination of clearcut size. Since then, planning teams have been using this approach, beginning with those plans scheduled for approval in the year 2001.

To meet the requirements of T&C 94(b), MNR developed an implementation manual that was released in two parts:

- The Forest Management Guidelines for the Protection of the Physical Environment helps forest managers prevent, minimize, or mitigate adverse effects on the physical environment when planning and conducting forest operations.
- The Forest Management Guide for Natural Disturbance Pattern Emulation direction to forest managers on designing harvest areas to more closely resemble natural disturbances by leaving more standing trees, as individuals and peninsular and insular patches, scattered throughout irregularly shaped harvest areas.

In keeping with T&C 27, the Forest Management Guide for Natural Disturbance Pattern Emulation explains that "a range of clearcut sizes . . . should be created to ensure the size class distribution of clearcuts follows the same tendencies [as those created by fire]" (MNR 2001b, Page 20). Clearcuts greater than 260 hectares are permitted, provided that they are consistent with the FMP Manual and that one or more of the following three conditions are encountered:

- the clearcut(s) is an attempt to 'de-fragment' a previous group of smaller cuts,
- the clearcut(s) is integrated as part of an overall strategy to provide wildlife habitat, and
- public concerns and concerns regarding impacts to other forest users have been addressed to the best of the planning team's ability.

The Forest Management Guide for Natural Disturbance Pattern Emulation states that clearcuts larger than 260 hectares must be documented with appropriate rationale in a forest management plan. The guide includes a standard that requires 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region to be less than 260 hectares in size.

The purpose of this guide is to provide direction for forest management practitioners in the development and implementation of forest management plans such that managed forest landscapes will resemble more closely the landscapes recently created naturally by fire. Over time, the application of this guide will create a landscape pattern that appears more natural than one that has been developed with the application of species-specific wildlife habitat guidelines.

A qualified and diverse writing team, which included representation from the forest industry, the environmental and academic communities and MNR, participated in the development of the Forest Management Guide for Natural Disturbance Pattern Emulation. Members of the public took a keen interest in this document - over 3,000 public comments were received during its production. As was experienced during the EA hearings, public concerns on the size of clearcuts continued. This guide was finalized in November 2001, and replaces the direction in the interim technical note, Defining a Clearcut. The stand-level direction in the guide will be implemented beginning with the 2003 FMPs, with the entire guide implemented for the first time in plans that come into effect in 2004.

In 1999, MNR's compliance with T&C 27 and 94(b) was the subject of an investigation by the Ministry of the Environment under the *Environmental Bill of Rights*. MNR was found to be in compliance with these terms and conditions.

Analysis of Implementation Experience

Information from scientific research has continued to support the concept of using a range of clearcut sizes to emulate natural disturbance patterns. The geographical placement of large clearcuts must, however, take human concerns into account. For instance, a large clearcut may not be preferred in some areas because of aesthetic concerns by the public (e.g., beside a cottaging lake). Alternatively, harvesting larger clearcuts quickly, followed by a long period with no harvesting, may be preferred for some remote resource-based tourism operators. There are opportunities where large clearcuts can be successfully integrated with remote tourism and other management objectives, such as woodland caribou habitat management.

Research conducted under T&C 107 (wildlife habitat supply modelling and landscape management methodologies) also supports the view that a range of clearcut sizes is desirable. Studies have found that harvesting created more forest edge than natural disturbances such as wildfire (Perera et al 2000a). Some wildlife species, like caribou, appear to respond negatively to increased edge, while others, like moose, flourish. Therefore, the amount of edge is one important consideration when emulating natural disturbance patterns. Given that the amount of edge is influenced by the size of the disturbance, the caribou habitat guidelines recommend the use of clearcuts greater than 260 hectares to reduce edge.

Research done for the Moose Guidelines Evaluation Project (T&C 80) found that closely following the direction in the moose habitat guidelines, which recommends clearcuts ranging in size from 80 to 130 hectares, resulted in a high density of forest access roads. This led to high moose harvests and stagnant or declining moose populations, despite apparent improvements in the quantity and quality of habitat (Rempel et al 1997). The project concluded that the use of larger clearcuts resulted in lower road densities, lower moose harvests and higher moose populations.

During the review of the draft Forest Management Guide for Natural Disturbance Pattern Emulation, concern was expressed that there will be a marked increase in large clearcuts in Ontario. However, in keeping with the *Crown Forest Sustainability Act* principle to emulate natural disturbances, and to be responsive to the EA Board's decision, some clearcuts will need to be larger than 260 hectares where supported by sound biological and silvicultural rationale. Implementation of the Forest Management Guide for Natural Disturbance Pattern Emulation restricts the number of clearcuts that are permitted to be greater than 260 hectares

MNR remains committed to research the concepts that are being used to guide forest management. MNR is also committed to respond to the concerns of forest stakeholders and the public to continue to improve forest management. The Provincial Forest Technical Committee will continue to have an integral role in reviewing, revising, amalgamating, categorizing or preparing new and existing implementation manuals as discussed in Sections 3.5.1.2 and 3.5.2.1.

Consistent with the requirements of T&Cs 27 (a) and (b) and 94 (b), the Forest Management Guide for Natural Disturbance Pattern Emulation provides direction on planning for a range of clearcut sizes to emulate natural disturbance patterns. The guide contains a standard on the number of planned clearcuts that are to be less than 260 hectares. Section 3.1.8 provides more information on FMP Manual requirements for planning clearcuts. The guide also contains standards for harvest layout, configuration and contiguity.

The requirements of T&Cs 27(a)&(b) and 94(b) have been met. MNR recommends that terms and conditions regarding clearcut harvest operations be updated to be consistent with MNR's approved implementation manual regarding the emulation of natural disturbance patterns.

Recommended Term and Condition

MNR recommends that T&Cs 27(a)&(b) and 94(b) be deleted and replaced with the following:

39. For clearcut harvest operations, areas shall be planned for harvest in accordance with the most current direction and standards in MNR's approved implementation manual(s) or guide(s) relating to the emulation of natural disturbance patterns, as described in the Forest Operations and Silviculture Manual. Currently, that direction provides for a range of sizes of clearcuts, which generally shall not exceed 260 hectares. It also includes a standard that requires 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region to be less than 260 hectares in size. In addition, that direction also includes requirements for temporal and spatial separation requirements for planned clearcuts.

3.5.2.3 Criteria for Water Crossing Removal

Current Requirement

The EA Board, through T&C 52(e), directed MNR and others to develop appropriate criteria for the identification of water crossings that require removal on abandoned roads to avoid negative environmental effects (e.g., impairment of water quality).

T&C 52(e)

(e) MNR shall form a committee of technical experts with the MOEE and the Industry in order to develop the biological, engineering, water quality and safety criteria referred to in Condition 52(d). These criteria shall be developed within two years of this approval.

(d) Where it has been determined that the primary or secondary road which traverses the Area of Concern is likely to be abandoned, if there is a water crossing in the Area of Concern there shall be a determination as to whether the water crossing is likely to require removal. That determination shall be based on biological, engineering, water quality and safety criteria. Relevant information to be considered at the time of issuance of construction approvals and work permits shall be provided in the Timber Management Plan.

Implementation Experience

To comply with T&C 52(e), MNR, with assistance from the Ministry of Environment and Energy and the forest industry, established a team of experts to examine the issue of road abandonment and water crossings. A first version of these biological, engineering, water quality and safety criteria was developed for the spring of 1996. A revised version, Criteria for Water Crossing Removal on Abandoned Roads, was released in 1997 (MNR 1997d). This document provides direction on how to use the criteria the experts developed to determine whether a water crossing is likely to require removal and how to use the information during forest management planning.

Training on the planning of forest access roads in forest management plans, using the criteria described in the 1997 document, has been provided through MNR's annual forest management planning training courses since the fall of 1997.

Analysis of Implementation Experience

The Criteria for Water Crossing Removal on Abandoned Roads, is a valuable planning and operational tool and meets the requirements of T&C 52(e).

The criteria contained in the 1997 document will be incorporated into the revised FMP Manual. MNR therefore recommends that T&C 52(e) be deleted.

Recommended Term and Condition

MNR recommends that T&C 52(e) be deleted.

3.5.3 Information Collection and Management

3.5.3.1 Inventory Information and Management Systems

Current Requirement

Through T&C 95, the EA Board required MNR to accelerate its program of inventory and information collection and enhance the development of its information management systems for easy retrieval and public availability.

> ***T&C 95***
>
> *MNR shall accelerate its program of inventory information collection concerning the timber resources and other values on Crown lands in the Area of the Undertaking for use in timber management planning. MNR shall enhance development of its information management systems to ensure that data is systematically collected, updated and stored; is easily retrievable by those involved in timber management planning; and is available to the public.*

Implementation Experience

MNR has made considerable progress in accelerating its program of inventory information collection for timber and other forest values, and in enhancing the development of its information management systems.

With respect to the collection of timber resources information, MNR and the forest industry has worked to update and maintain the forest resource inventory so the data are available to forest managers in the early stages of management plan preparation. In 2002, the forest resource inventory within the Area of the Undertaking will be fully digital, facilitating the integration of values information with basic forestry data.

With respect to the collection of other forest resource values information, MNR has directed its efforts at other closely related terms and conditions. An example is T&C 97, forest ecosystem classification, which requires MNR to develop systems to classify forest stands by ecosite or site type.

The identification and mapping of wildlife habitat values for forest management planning has been an integral part of forest management planning since 1996/97, which has accelerated the collection of habitat information. Wildlife habitat inventory programs direct resources to areas allocated for harvest and other forest operations, where the need for information is most immediate. Guidance to direct wildlife habitat inventory effort is given in the Selected Wildlife and Habitat Features: Inventory Manual (Ranta 1998).

MNR has also developed predictive models and other methods to identify high potential cultural heritage sites, and accelerated their application.

For standardized storage and retrieval of values information at the management unit level, MNR developed the Natural Resources Values Information System. Based on a geographic information systems framework, the Natural Resources Values Information System established data mapping standards for values, and provides for their systematic update, maintenance, storage and retrieval. Timber values, fish and wildlife habitat values, and other natural resource and infrastructure features (e.g., roads and utilities), have all been incorporated into the Natural Resources Values Information System.

The Natural Resources Values Information System data can now be merged into a provincial data set within the Ontario Land Information Warehouse, which in turn is linked to the Land Information Ontario program. This ensures that this information is available to other ministries and stakeholders. Through the Natural Resources and Values Information System, MNR can also produce values maps, as required by T&C 17 and Appendix 5 of the EA Approval, which are available to the general public during the preparation of forest management plans.

These improvements have also contributed to meeting the background inventory and mapping requirements of T&Cs 15, 16 and 17.

The regulation of the Forest Information Manual has also clarified requirements in information exchange between MNR and the forest industry to ensure that timber resource and values data are systematically collected, updated and stored and are easily retrieved by those involved in forest management planning. Other initiatives, such as Land Information Ontario, have improved public access to land related information.

Analysis of Implementation Experience

The acceleration of information collection for timber and other values, and the strategic funding approach for the collection of values information have improved MNR's values inventory collection systems. Improvements in data collection programs and advances in the types of information available have helped to ensure those values and their locations are known to forest management planning teams. Knowing the locations and the types of values helps to ensure they are protected from the potential impacts of forest operations.

Some values information MNR now collects and uses in forest management also fulfils the requirements of other terms and conditions of the EA Approval (e.g., T&C 97, the Forest Ecosystem Classification Program; T&C 98 Northern Ontario Wetlands Evaluation System; and T&C 99 Areas of Natural and Scientific Interest surveys).

The development and deployment of information technology by MNR for data collection, storage and retrieval was enhanced with the development of geographic information systems and products such as the Natural Resources Values Information System. This system is the main tool used for storage and retrieval of values information and continues to be improved through upgrades. Information collected in a systematic and timely manner, and managed using improved tools and techniques, helps to ensure that planning decisions are made in an open and efficient manner. Values information is available to the public, except in specific circumstances where the publication of the location of the value may be detrimental to conservation (e.g., culturally significant values).

MNR will continue to enhance information management systems and their use in collecting, storing, updating and retrieving information. MNR will also ensure that the Forest Information Manual is updated to provide support in this area. In recognition of the progress made to date, MNR recommends that T&C 95 be amended.

Recommended Term and Condition

MNR recommends that T&C 95 be deleted and replaced with the following:

40. MNR shall ensure that information management systems necessary to support forest management planning, which enhance the capability to systematically collect, store, update and retrieve information, continue to be developed. Values information will be generally available to the public.

3.5.3.2 Forest Ecosystem Classification Program

Current Requirement

The EA Board, through T&C 97, required MNR to continue to develop a Forest Ecosystem Classification Program to provide support to forest management planning.

T&C 97

MNR shall continue the development of the Forest Ecosystem Classification Program through the following initiatives:

(a) The completion of "interpretation manuals" to assist in application of the Forest Ecosystem Classification program;
(b) The examination of improved inventory and mapping technologies;
(c) The expansion of the program throughout the Area of the Undertaking; and
(d) The enhancement of technology transfer and training programs.

Implementation Experience

With the collaboration of outside agencies and the general support of the forest industry, forest ecosystem classification was integrated into a much broader MNR program known as Ecological Land Classification. This program developed manuals, analytical tools, and other products, in addition to carrying out research investigations. Improvements were made in inventory and mapping technologies. For example, algorithms were developed to translate existing forest resource inventory data into an ecological land classification, generally an ecosite classification. Some management unit planning maps can now be produced showing both Forest Resource Inventory data and the corresponding ecosite. Extensive training in the use and application of ecological land classification has been provided to natural resource managers.

Analysis of the Implementation Experience

The Ecological Land Classification Program, which evolved from the Forest Ecosystem Classification Program, has provided important information for use in natural resource management. Under the auspices of the Forest Ecosystem Classification Program, numerous standards were developed for inventory collection, monitoring, reporting and planning. As our understanding of ecosystems improves, the ability to integrate other aspects of MNR's activities into an ecological framework will similarly improve.

The Ecological Land Classification Program is providing products and tools necessary to meet the needs of forest management. It will continue to evolve to address such matters as classifying successional forest stages and making predictions on future forest conditions. It also provides a common classification system used in other program areas such as MNR's parks and protected areas program.

MNR recommends this term and condition to be amended to reflect the shift from a forest ecosystem classification to the broader context of the Ecological Land Classification Program.

Recommended Term and Condition

MNR recommends that T&C 97 be deleted and replaced with the following:

41. MNR shall continue the development of the Ecological Land Classification Program through the following initiatives:

- **(a) ensuring appropriate interpretation manuals are available to assist in the use of Ecological Land Classification in forest management planning;**
- **(b) continuing to improve inventory and mapping technologies;**
- **(c) maintaining the classification program for the entire Area of the Undertaking; and**
- **(d) continuing to provide for technology transfer and training programs.**

3.5.3.3 Northern Ontario Wetlands Evaluation System

Current Requirement

During the EA hearings, the EA Board recognized the need for a system to evaluate and provide ecological information on northern Ontario wetlands and through T&C 98, required MNR to develop a Northern Ontario Wetlands Evaluation System, for use in timber management planning.

T&C 98

Within three years of this approval, the Ministry of Natural Resources shall develop a Northern Ontario Wetlands Evaluation System, to provide information on wetlands for use in timber management planning.

Implementation Experience

MNR already had a wetlands evaluation system in place for Southern Ontario (MNR 1994a) and had begun work on a Northern Ontario wetlands evaluation system prior to the EA Approval.

A Northern Wetlands Working Group, and later, the Provincial Wetlands Working Group, was established by MNR for the purpose of adapting the 1993 wetlands evaluation system, that was used in Southern Ontario, to northern wetlands. A revised northern manual titled Ontario Wetland Evaluation System: Northern Manual was released by MNR in 1994 (MNR 1994b), thereby complying with T&C 98, three years in advance of the requirement.

A ranking is used to classify wetlands, including those that are provincially significant. This is based upon an evaluation of their ecological features, values and functions. Provincially significant wetlands are protected in different ways, dependent on their geographic location. In the southern part of the province, where private land and municipal organizations prevail, wetlands protection is provided through the *Planning Act* (1990). The Act requires that planning decision-makers have 'due regard' for provincial policy statement indicating that there should be no development or alteration of provincially significant wetlands. and the development and site alteration of provincially significant wetlands is not permitted. However, in Northern Ontario, wetlands located on the Canadian Shield, development and site alteration in provincially significant wetlands may be permitted if it can be demonstrated there will be no negative impacts on the natural features or the ecological functions of the wetland.

In Northern Ontario, MNR district office staff assess whether planned forest operations have potential to impact a wetland and a decision is made whether to evaluate and rank the wetland. If the wetland is identified and evaluated as a provincially significant wetland, it is identified as a value within the forest management planning process and operations are planned in accordance with Area of Concern planning requirements.

Analysis of Implementation Experience

The publication of the northern wetlands manual and the subsequent release of explanatory technical notes (Chisholm et al. 1995; Davies et al. 1996) improved the use of the evaluation system. These tools enable forest management planning teams to identify wetlands on the basis of their ecological features, values and functions.

The Southern and Northern Ontario wetlands evaluation manuals will be updated through the work being conducted as part of the Ecological Land Classification Program and will continue to be applied in forest management planning.

MNR has met the requirement of T&C 98 to develop a Northern Ontario Wetlands Evaluation System and recommends that this term and condition be deleted.

Recommended Term and Condition

MNR recommends that T&C 98 be deleted.

3.5.3.4 Areas of Natural and Scientific Interest

Current Requirement

T&C 99 required MNR to complete, within five years of the decision (i.e., by May, 1999), surveys across all site regions that identify candidate life science Areas of Natural and Scientific Interest. These refer to living organisms (e.g., old growth, white pine forests). Similarly, T&C 99 required MNR to complete surveys across the entire Area of the Undertaking to identify significant earth science Areas of Natural and Scientific Interest. These refer to geological formations (e.g., eskers, drumlins). The information was to be used in timber management planning.

> ***T&C 99***
>
> *Within five years of this approval, the Ministry of Natural Resources shall complete surveys which identify candidate life science Areas of Natural and Scientific Interest (ANSIs) in all Site Regions and significant earth science ANSIs within the Area of the Undertaking for use in timber management planning.*

Implementation Experience

At the time of the EA decision the land classification methodology used by MNR was based on the Hills classification system, that used site district and site region delineation. Since that time, MNR has adopted the Ecological Land Classification that uses ecodistrict and ecoregion delineation. Implementation results reported in provincial Annual Reports on Forest Management have followed the Hills classification system in reports up to and including 1997/98. Subsequent reports have used the Ecological Land Classification System.

The wording of T&C 99 warranted some interpretation with respect to life science values. The identification of representative life science Areas of Natural and Scientific Interest is primarily done on an ecodistrict (site district) basis, not on an ecoregion (site region) basis. Therefore MNR has responded to this term and condition by completing surveys on a finer geographic scale than was required for life science values.

Areas for earth science representation are identified on the basis of geological themes (e.g., glacial deposits) rather than on the basis of a land classification system.

MNR has completed surveys which identified candidate life science and significant earth science Areas of Natural and Scientific Interest in the Area of the Undertaking during the first five years of the EA Approval. Most of these surveys were conducted in support of land use planning exercises, particularly those associated with planning for parks and protected areas. Regardless of the means of identification, these features have been recognized as values in forest management planning.

Analysis of Implementation Experience

In 1996/97, all 49 ecodistricts, and all of the surficial geological themes occurring within the Area of the Undertaking, were subjected to gap analyses, to identify the best sites that would represent the ecological and geological values not captured in the existing parks and protected areas system. 'Gap analysis' is a systematic technique used to determine geographic priorities in conserving biological, ecological or geological diversity. Once the areas with the best representation were identified, they were put forward to the Lands for Life Round Tables for their consideration as possible new protected areas. After further public consultation, proposals were finalized in the approved Ontario's Living Legacy Land Use Strategy, which recommended the establishment of 378 new or expanded parks and protected areas containing 2.4 million hectares.

MNR directed forest management planning teams to take all necessary precautions to ensure all recommended parks and protected areas are not compromised as a result of any planned forest management operations.

The Ontario Forest Accord, which was developed by members of the forest industry, the Partnership for Public Lands and MNR supported the establishment of a mutually acceptable process to increase the representative protected areas system within the Area of the Undertaking.

MNR has completed the surveys within the timeframe required by this term and condition and recommends that T&C 99 be deleted.

Recommended Term and Condition

MNR recommends that T&C 99 be deleted.

3.5.4 Scientific Research and Technical Development

3.5.4.1 Growth and Yield Program

Current Requirement

The EA Board concluded during the course of the EA hearings that more comprehensive information on growth and yield of forests was required. Foresters, biologists, geneticists and many others needed better information on growth and yield to estimate and measure the growth of trees and forests. T&C 100 describes this requirement.

T&C 100

MNR shall design and implement a provincially coordinated program to obtain further information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

Implementation Experience

MNR designed and established a comprehensive, long-term, provincially coordinated Growth and Yield Program under the auspices of the Ontario Provincial Terrestrial Assessment Program. A network of 1,100 permanent sample plots has been established in a stratified sampling design, mostly across the Area of the Undertaking, although some of the plots are outside the Area of the Undertaking. By establishing permanent sample plots within ecologically similar forest stands in various, key successional stages, and by taking repeated measurements on various ecosystem elements, predictions on forest growth and yield can be made. This technique is known as 'chronosequencing' and is expected to produce results on forest growth and yield in less than half the time it would take if forests were simply monitored as they grew.

Recently, MNR has entered into a partnership arrangement with the forest industry to establish a network of permanent growth plots. Permanent growth plots allow for the collection of some of the same information as permanent sample plots, but are less expensive, easier to establish and are also designed to address specific needs of forest managers. In addition, five significant, historical growth and yield plot networks are in the process of being included in the growth and yield program. These historical plot networks will enhance the ability of the program to assess the impacts of forest management practices on forest growth and yield.

In addition to the basic information the program is providing on the effects of silvicultural practices as compared to natural succession, it is also being used to assist in other areas. For example, the Growth and Yield Program is providing the data needs for some 'exceptions monitoring', relating to forest productivity on shallow sites, and is closely linked with studies on the long-term effects on forest productivity caused by full-tree harvest and full-tree chipping as discussed in Section 3.5.4.2. The Growth and Yield Program is also a source of information on snags and downed and woody debris, which contribute to forest productivity and are important components of wildlife habitat for many species.

Analysis of the Implementation Experience

The forest growth and yield program is a comprehensive program requiring the assistance of partners. The program has gained widespread interest and is linked to studies and programs that involve other agencies and institutions throughout North America. The growth and yield program, by necessity, is long term in nature. It will continue to contribute significantly to forest management planning and is already providing valuable information that is being used in the provincial forest management program.

MNR has designed and is implementing a Provincial Growth and Yield Program as required by T&C 100 and recommends the continuation of this program.

Recommended Term and Condition

MNR recommends that T&C 100 be deleted and replaced with the following:

42. MNR shall continue to support and implement a provincially coordinated program to obtain further information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

3.5.4.2 Full-tree Harvest and Full-tree Chipping Studies

Current Requirement

Concerns over the long-term effects of full-tree harvesting and full-tree chipping on forest productivity were heard by the EA Board. MNR was required by the EA Board, through T&C 101, to design and implement a study to address these concerns.

> ***T&C 101***
>
> *MNR shall design and implement a study pertaining to the effects of full-tree harvest and full-tree chipping on long-term forest productivity.*

Implementation Experience

Full-tree harvesting is the practice of removing the aboveground portion of the tree from the site, treetop and all. De-limbing and topping is usually done at roadside, and the resulting slash is burned or sometimes left to decompose. Full-tree chipping is the practice of removing the aboveground portion of the tree from the site and chipping it at roadside, top and all. In this case, bark and other small pieces of wood are separated from the chips by screening, and left to decompose at roadside.

There are two productivity concerns with respect to these practices. One is their potential effect on nutrient cycling, especially on those nutrient-poor soils where much of the nutrients are in the trees. The other concern is with the amount of area covered by slash or other debris as a result of de-limbing, topping or chipping, which may restrict trees from re-establishing.

A provincial-level Sustainable Productivity Working Group comprised of researchers from MNR and the Canadian Forest Service designed a full-tree harvest and full-tree chipping study for black spruce and jack pine forest types. These forest types were chosen for study because jack pine and black spruce are the two most abundant and important commercial species in Ontario's boreal forest. The study is examining harvest-related nutrient removals, especially on shallow and coarse-textured soils. This research requires approximately 20 years to complete.

The study has strong linkages to the academic community and the forest industry and is also affiliated with other programs, notably the Long-Term Soil Productivity Network, an inter-jurisdictional program.

This study is being used to assist in the data needs for an exceptions monitoring program (i.e., harvesting on shallow sites in northwestern Ontario). This program is also closely linked to T&C 100, which pertains to forest growth and yield.

Analysis of Implementation Experience

This study is long-term in nature and was designed to meet the requirements of T&C 101. The project is meeting its objectives, and results have already been used to improve forest management practices. To date, the research has resulted in a number of refereed journal papers, a book chapter, technical reports, theses and workshop/conference presentations. Interim conclusions on the impacts of these harvesting practices on nutrient levels in spruce and jack pine forest ecosystems are expected to be available after the collection and analysis of data from the 2001 and 2002 field seasons.

The study provided input into the Forest Management Guidelines for the Protection of the Physical Environment, which is a requirement of T&C 94(b). The physical environment guidelines were prepared to help resource managers prevent, minimize or mitigate the potentially negative impacts that forest operations can cause (e.g., erosion, rutting, soil compaction, nutrient removals, etc.).

MNR has designed and is implementing the study required by this term and condition. MNR recommends that this long-term study continue as part of this EA Approval.

Recommended Term and Condition

MNR recommends that T&C 101 be deleted and replaced with the following:

43. MNR shall continue to investigate, through a long-term study, the effects of full-tree harvest and full-tree chipping on long-term forest productivity.

3.5.4.3 Tending and Protection Improvement Programs

Current Requirement

T&C 102 requires MNR to ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests.

T&C 102

MNR shall ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests by maintaining policies and procedures that ensure proper and safe use of registered and approved products; investigating new technologies; testing alternative control methods; and supporting research initiatives.

Implementation Experience

MNR maintains policies and procedures in order to ensure that pesticides are used properly, safely and in accordance with scientific knowledge. As a result of the research and studies by MNR and its partners, MNR is revising its directives and procedures governing the use of pesticides.

With its partners, MNR has participated in approximately 10 to 15 investigations, tests or research projects a year on tending and protection. Some examples of these projects are:

- Testing of a guidance system that uses weather parameters from the forest canopy to adjust the location of aerial spray lines, in order to minimize off-target drift and optimize spray deposit on the target area.
- Testing of the botanical insecticide *neem*, to control insects such as sawflies which are not susceptible to other commonly used, non-chemical pesticides such as *Bacillus thuringiensis* (B.t.).
- Testing of new B.t. products for controlling spruce budworm.
- Supporting Canadian Forest Service research projects that support T&C 102 primarily focussed on pesticide application rates and methodologies.

MNR created the Vegetation Management Alternatives Program, to explore alternatives to the use of herbicides in tending and protection programs. To date, the Vegetation Management Alternatives Program has produced over 172 reports, including refereed journal publications, conference papers and technical reports. The program has also led to advances in the use of motorized brush cutters and mechanical cutter heads for tending and spacing young stands, in the use of prescribed burning for regenerating red oak, and in the use of mulches and tree shelters to improve seedling survival. Investigations are continuing with other studies, such as one on a fungal pathogen that shows promise for controlling hardwood competition. Some investigations resulted in data showing that some alternatives were neither effective nor cost-effective.

Some Vegetation Management Alternatives Program studies have shown that herbicide use in conjunction with clearcutting, mechanical site preparation and planting of a single tree species does not lead to forest monocultures. Other studies found little or no difference between herbicide and non-herbicide alternatives with respect to ecosystem response. Finally, some alternatives to herbicides proved to be environmentally damaging. For example, sheep used for vegetation control were found to pose a threat to water quality.

Analysis of Implementation Experience

Over the last ten years, there have been dramatic improvements in the knowledge of alternative methods of controlling insects and disease and competing vegetation, as well as how to use pesticides safely, effectively and efficiently. Knowledge has been gained through extensive testing by MNR and its partners. These partners include other provinces, the Government of Canada (primarily the Canadian Forest Service), the forest industry, academic institutions and other agencies.

In Ontario's Crown forests, there has been very little use of chemical pesticides for insect control in recent years. Instead, insect control has focused on the use of biological insecticides such as B.t. Although B.t. is not effective in controlling all insect pests, other similar control agents, such as the botanical insecticide *neem*, look promising. Even biological control agents can affect non-target organisms, though, and work is still required, especially to improve the ways these agents are applied.

Research done under the auspices of T&C 102 has found aerial herbicide application to be efficient and effective. A significant technological advance to improve the safety, efficiency, and effectiveness of aerial application of pesticides has been the development and operational use of global positioning systems. When used in combination with geographic information systems, it provides for more accurate flight lines, better navigation to and from treatment blocks, and an improved record of where the aircraft flew and where spraying occurred.

There has been some success in finding non-pesticide methods to control undesirable vegetative competition, but many of the alternatives studied were found to be difficult and costly to use. Some were potentially harmful to the environment. Several of the studies are ongoing, and the results from these long-term studies will provide helpful information.

MNR will continue to ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests.

Recommended Term and Condition

MNR recommends that T&C 102 be deleted and replaced with the following:

44. MNR shall continue to ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests by maintaining policies and procedures that ensure proper and safe use of registered and approved products, and by collaborating with research partners engaged in tending and protection research initiatives.

3.5.4.4 Old Growth

Current Requirement

Term and condition 103 required MNR to investigate the subject of 'old growth' ecosystems and develop a policy to provide an environmentally sound conservation strategy, and definitions of old growth specific to Ontario forest conditions. Term and condition 103 also required MNR to provide a conservation strategy, and to develop management directions and definitions for old growth white and red pine by May 1995. MNR was required to develop management direction for use until a general policy setting out an environmentally sound conservation strategy was available. Old growth white pine and red pine stands within site region 4E were to be excluded from harvesting until the old growth white and red pine conservation strategy was produced. Further, FMPs were to record all sites found to contain communities of old growth white and red pine as values, or record why a particular site did not constitute old growth white or red pine.

T&C 103

(a) During the term of this approval, MNR shall investigate the subject of "old growth" ecosystems and develop a policy to provide an environmentally sound conservation strategy, and definitions of old growth specific to Ontario forest conditions.

(b) As an interim measure, within two years of this approval, MNR shall develop management direction concerning old-growth values for use in timber management planning.

(c) MNR shall provide an environmentally sound conservation strategy and management direction concerning red and white pine old-growth values for use in timber management planning across the Area of the Undertaking by May 1995.

(d) Old growth red and white pine stands within site region 4E shall continue to be excluded from harvesting until such a policy is provided and implemented.

(e) For the purpose of this approval, and until a provincially coordinated general policy setting out an environmentally sound conservation strategy is provided which,

  (i) Defines old growth white and red pine or deems what is old-growth white and red pine, and

  (ii) Provides a specific process to identify and plan for the management and conservation of old-growth white and red pine,

Timber Management Plans must record as values pursuant to Appendix 5, part B, section 1(a)(iv) all sites found to contain communities of old growth white and red pine. Where candidate sites are omitted from the values list and values maps, the Plan must record the reasons the site does not constitute old growth white and red pine.

Implementation Experience

T&C 103(a) & (c)

As part of its investigation on old growth forest ecosystems, MNR appointed a public advisory committee to represent the full range of public opinion on the issue. The Old Growth Forest Policy Advisory Committee was made up of representatives from the forest and mining industries, organized labour, Aboriginal people, environmental and conservation groups, and the faith and education communities.

The Committee initiated public involvement and consultation in January 1992, and then produced a publication titled Interim Report on Conserving Old Growth Red and White Pine (Old Growth Policy Advisory Committee 1993). In response to that report, MNR released, in May 1995, A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems for Ontario (MNR

1995b). The strategy was incorporated into the requirements for forest management planning in the FMP Manual.

The Committee then expanded its attention and public consultation to include all old growth forest ecosystems. These efforts resulted in their final report titled Conserving Ontario's Old Growth Forest Ecosystems: Final Report of the Old Growth Policy Advisory Committee (Old Growth Policy Advisory Committee 1994). The people who participated in the Committee's public consultation included community and environmental groups, foresters, academics, scientists, the forest industry, Aboriginal people, government, field biologists, ecologists, cottagers, naturalists, and concerned citizens.

In 1997, after public review and comment on the Committee's final report, MNR released a draft old growth forest policy proposal titled A Conservation Strategy for Old Growth Forest Ecosystems on Crown Lands in Ontario (MNR 1997e). This policy proposal was posted on the Environmental Registry at the time for public review and comment. The Provincial Forest Policy Committee was involved in the development of the old growth policy proposal prior to its release. Further work on the draft policy proposal was postponed when government efforts were directed towards enhancing parks and protected areas through the Lands for Life land use planning initiative.

An Old Growth Definitions Project Team comprised of MNR staff was established in December 1997 to develop definitions of old growth specific to Ontario forest conditions. The findings of this team have been compiled into a draft report titled Old Growth Forest Definitions for Ontario: Draft for Public Review and Comment (Uhlig et al. 2001), which was released for public review and comment in April 2002. The definitions will support Ontario's continuing efforts to identify old growth forests across the province. When finalized, the old growth policy will serve as an environmentally sound conservation strategy, with definitions of old growth specific to Ontario forest conditions.

T&C 103 (b)

T&C 103(b) required MNR to develop management direction concerning old growth values. Management direction is provided through a variety of legal and policy instruments. These are used by resource managers to direct and guide how Ontario's forest lands and resources are to be managed.

Prior to the EA Approval in 1994, MNR was providing interim management direction for conserving old growth values through a variety of means including: MNR Central Region's 1992 guideline, Incorporating Biodiversity in Timber Management Plans (MNR 1992b); and MNR's Policy Framework for Sustainable Forests.

After 1994, interim management direction with respect to 'old growth values' was provided to planning teams through a variety of policies, documents and activities. Examples include:

- MNR's Statement of Environmental Values (MNR 1995c);
- The *Crown Forest Sustainability Act*
- The Forest Operations and Silvicultural Manual;
- A Conservation Strategy for Old-growth Red and White Pine Forest Ecosystems;
- The Forest Management Planning Manual;
- The Forest Management Guidelines for the Provision of Marten Habitat; and
- The Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat.

Since May 1996, MNR has developed additional management direction through guides, courses and study notes. Examples of these include the operational field guide, Retaining Cavity Trees in Clearcuts (MNR 1997), A Silvicultural Guide for the Tolerant Hardwood Forest In Ontario and A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest In Ontario.

Forest management plans have addressed management direction concerning the conservation of old growth values. In addition to meeting FMP Manual requirements, many planning teams have developed management unit objectives for maintaining the proportion of area in mature and older age classes. Current FMPs include specific requirements for the retention of cavity trees and other old growth characteristics in areas allocated for harvest.

In 1996, compliance with T&C 103(b) was at issue during the *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* judicial review proceedings. Section 1.2.5 provides additional information on the judicial review proceedings.

T&C 103 (d)

T&C 103 (d) states that, "Old growth red and white pine stands within site region 4E shall continue to be excluded from harvesting…", without being specific as to which stands these are. The reference to "continue to be excluded" has been interpreted by MNR to refer to the ten old growth sites identified in the 1990 report, Reconnaissance Inventory to Locate Old White and/or Red Pine Stands in Site Region 4E of the Ontario Ministry of Natural Resources (Iles 1990). The EA Board refers to these ten sites on page 387 of their decision. These ten sites were excluded from harvesting until the conservation strategy for old growth red and white pine referenced in T&C 103 (c) was completed.

With the release of A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems, the requirement to exclude all ten of these sites from harvesting was no longer applicable. Of the original ten sites, MNR protected four in Conservation Reserves under the *Public Lands Act* in 1994 and 1995, two through expansions to Mississagi River and Obabika Provincial Parks in 1996, and one in a Forest Reserve in the Ontario Living Legacy Land Use Strategy in 1999. Two of the remaining three sites were not protected because they were on a landform type that was already represented and protected in the expansion to Mississagi River Provincial Park. After an intensive field investigation, it was determined that the third site had been harvested prior to 1960 and did not contain significant amounts of old growth red and white pine.

T&C 103 (e)

Part (e) of T&C 103 specified requirements for recording old growth red and white pine communities as values. Sections 3.1.5 and 3.1.8 of this review also reference this requirement. As described under sub-section T&C 103(b) and (c), these requirements were met and incorporated in the FMP Manual.

Analysis of Implementation Experience

Since 1990, MNR has adopted a number of techniques for the conservation of old growth. Over 100,000 hectares of old growth red and white pine forest stands have been protected in conservation reserves and provincial parks since 1994. Through the Ontario Living Legacy Land Use Strategy, additional old growth areas have been protected and are being regulated.

MNR has been providing interim management direction for the conservation of old growth values through a variety of provincial policies, directives and guidelines. Further, all late successional or overmature red and white pine forests are identified as values in forest management plans. Many FMPs include management unit objectives for maintaining or increasing the proportion of mature and older age classes, and include requirements for maintaining old growth characteristics (e.g., snags, downed woody debris, etc.) during harvesting operations.

The work of the Old Growth Policy Advisory Committee in gathering input and recommendations from the public and using that information to make recommendations to the Minister of Natural Resources has enabled MNR to move forward in identifying old growth red and white pine forests. MNR is also moving forward with the development of definitions of old growth specific to Ontario forest conditions and will revise the1997 draft old growth policy proposal.

The MNR's old growth policy proposal will be developed during the term of the current EA Approval, specifically by May 18th, 2003, and will provide direction for the conservation of old growth forests in Ontario. This will include objectives for old growth conservation for implementation through planning processes. Progress in achieving the objectives will be tracked over time through inventory, monitoring and assessment with results reported in Ontario's State of the Forest Report.

The Provincial Forest Policy Committee is providing MNR with advice during the review and update of the 1997 draft old growth policy proposal. When approved, the policy document will include a commitment for periodic reviews after approval. MNR will seek the advice of the Provincial Forest Policy Committee in future reviews of this policy.

MNR has demonstrated Ontario's commitment to conserving old growth forests now and into the future, through the development of a conservation strategy, management direction and associated old growth forest definitions for Ontario. MNR is committed to develop an old growth policy by May 18th, 2003, as described by T&C 103 and will do so prior to expiry of the current EA Approval.

Recommended Term and Condition

MNR recommends that T&C 103 be deleted.

3.5.4.5 Data Systems and Analytical Methodologies

Current Requirements

In recognition of the rapid advancements being made in analytical methods, models, and geographic information systems, the EA Board required MNR, through T&Cs 104, 107 and 108, to examine, investigate and develop these tools for use in timber management planning. The term and condition is directed at four specific areas: social and economic analytical methods; wildlife habitat supply modelling methodologies; landscape management methodologies; and geographic information systems.

> ***T&C 104***
>
> *Within two years of this approval, MNR shall investigate available analytical methods for assessing social and economic advantages and disadvantages and their applicability to Ontario's timber management operations, and shall develop or adopt appropriate methodologies for use in timber management planning.*

> ***T&C 107***
>
> *During the term of this approval, MNR shall continue to examine wildlife habitat supply modelling methodologies, and landscape management methodologies as potential means of addressing biological diversity concerns in timber management planning.*

> ***T&C 108***
>
> *During the term of this approval, MNR shall continue its development of Geographic Information System technology for use in timber management planning in Ontario and the transfer of that technology to field offices in the Area of the Undertaking.*

Implementation Experience

Social and Economic Analytical Methods

The EA decision speaks to two types of social and economic analysis: the estimation of non-timber values and the analysis of socio-economic impacts (Koven and Martel 1994, Pages 340-343). 'Non-timber values' used in this context refers to economic valuation, not a feature shown on a values map.

MNR has sponsored and assisted a variety of research initiatives focusing on non-market valuation techniques and their applicability in Ontario. One investigation to determine non-timber values resulted in a report titled Licence-Based Valuation Method: A Zonal Travel Cost Approach to Valuing Moose Hunting (MNR 1999e). Through this work, a non-timber values database was developed and used to support the land use decisions being incorporated into Ontario's Living Legacy Land Use Strategy.

In 1996, MNR developed the Socio-Economic Impact Model, a computer program that allows the user to determine the economic, social and environmental impacts of alternative forest resource uses. The Socio-Economic Impact Model is fully operational; a new version was produced in 2000 that uses ecological regions and MNR's district boundaries as the basis for its analyses.

Wildlife Habitat Supply Modelling Methodologies and Landscape Management Methodologies

As a result of its research efforts, MNR has a number of new tools and methodologies to undertake landscape analyses, predict future landscapes, and examine the effects of these changes on wildlife habitat supply. Significant advances have been made in three areas, which have improved MNR's ability to address biological diversity concerns:

1. The Habitat Supply Modelling Program acquired or developed non-spatial habitat suitability models (e.g., the Strategic Forest Management Model Tool) and spatial habitat supply models (e.g., Ontario Wildlife Habitat Analysis Models [Naylor et al. 1999] for wildlife species in the Area of the Undertaking).
2. The Multi-Scale Habitat Assessment Model Program is developing tools (e.g., the Landscape Scripting Language [MNR 2002d]) to enable the quick assessment of a management unit's Forest Resource Inventory. This program looks at patterns of habitat suitability over multiple spatial scales.
3. The Forest Landscape Ecology Program developed landscape assessment methodologies and tools [e.g., Ontario's Forest Fire History: An Interactive Digital Atlas (Forest Landscape Ecology Program 1998)]. These can be used to help assess the effects of natural change and human activity on biodiversity and forest sustainability at the landscape scale.

Geographic Information Systems

Since the EA decision, MNR has developed geographic information system technology for applications at the provincial level, as well as for detailed operations required at the management unit level.

During the term of the EA Approval, MNR developed the Natural Resource Values Information System, based on a geographic information system framework. This information system established data mapping standards for values and provides for their systematic update and storage. Timber values, fish and wildlife habitat values, and other natural resource and lands values, have all been incorporated into Natural Resource Values Information System.

MNR is Ontario's lead agency with respect to land-related information and geographic information systems. District information in Natural Resource Values Information System has been merged into a provincial data set called the Ontario Land Information Warehouse, which is linked to the Land Information Ontario Program. This Program makes geographical information accessible and provides for integration across government and its partners.

A number of analytical models were developed or acquired by MNR (e.g., the Ontario Wildlife Habitat Analysis Models, Ontario Marten Analyst [Elkie et al 1999]) to assist in forest management planning, using geographic information system-based information.

When the Forest Information Manual was regulated under the *Crown Forest Sustainability Act*, the exchange of certain information and information products, including forest resource inventory, between MNR and forest resource license holders became mandatory. Geographic information system technology has facilitated this requirement. The forest industry and many other resource partners also make use of geographic information system technology, facilitating the exchange of information.

Geographic information system technology is in place in MNR offices throughout the province with trained and dedicated staff.

Analysis of Implementation Experience

The use of computer-based tools and other new analytical methodologies MNR has investigated, acquired and/or developed are proving to be valuable aids in forest management.

Socio-economic impact analysis modelling allows planning teams to examine the social and economic impacts of various management alternatives. Data used in modelling are continually updated, as new data (e.g., census data) become available.

The habitat supply models and methodologies are providing useful analysis to address biodiversity concerns. Non-spatial tools such the Strategic Forest Management Model Tool are being used to estimate the habitat supply of many wildlife species now and into the future. Spatial tools such as Ontario Wildlife Habitat Assessment Models are capable of displaying where habitat elements for specific species occur. To manage the habitat for any given species, it is essential to know the amount of habitat available and its setting within the managed landscape. As knowledge about wildlife habitats improves, habitat supply models and methods will also improve.

Landscape management methodologies are also proving useful to addressing concerns about biodiversity, such as forest patterns resulting from different fire regimes. Integration of knowledge about wildlife habitats, and the development of improved habitat supply and landscape management models and methodologies will continue to evolve.

Geographic information system-based applications have become a cornerstone of MNR's information management systems. The Natural Resource Values Information System, MNR's geographic information system-based land and resource information system, provides leadership within the province with respect to making geographical information accessible and integrated with other ministries through the Land Information Ontario program.

There is a need to continue developing the appropriate tools, models and methods for use in forest management planning to build on achievements made to date. MNR therefore recommends amendments to T&C 104, 107 and 108.

Recommended Term and Condition

MNR recommends that T&C 104,107 and 108 be deleted and replaced with the following:

45. MNR shall continue to maintain and further develop methodologies for use in forest management planning which:
- **(a) address social and economic considerations when developing prescriptions and making forest management decisions;**
- **(b) investigate and address wildlife habitat supply, biological diversity and landscape management analyses across both temporal and spatial scales;**
- **(c) capture, store and provide access to spatial information using geographic information system technology;**
- **(d) continue to incorporate the use of geographic information system technology in the development of models and tools; and**
- **(e) ensure staff are trained in the use and application of the methodologies and technologies which are developed.**

3.5.4.6 Forest Resource Assessment Policy

Current Requirement

Harvest and renewal methods received a great deal of the EA Board's attention, but so did the level of harvest and renewal. The EA Board was concerned that MNR's level of renewal funding, which was declining at the time due to reductions in government funding, might not be sufficient to meet the future demand for Ontario forest products. In its decision, the EA Board found MNR's Forest Production Policy (MNR 1972) to be out-of-date, and ordered that it be replaced with a new timber production policy addressing the matter of harvest and renewal levels (Koven and Martel 1994, Page 379).

The 1972 provincial Forest Production Policy referred to by the EA Board contained forecasts of future timber demand, timber harvest availability, forest renewal requirements and forest management funding. The provincial timber production target was used to set the investment level required to support the goal of 9.1 million cunits (25.8 million cubic metres) of wood annually by the year 2020. It was translated into an implementation schedule that provided MNR administrative regions and districts with annual targets for harvesting, renewal, site preparation, tending, marking, and stock production activities.

At the time of the EA hearings, MNR was working to revise this policy. By the late 1980s, the Forest Production Policy was considered to be outdated in its assumptions of Ontario's forest resources. Crown timber supplies were changing as a result of changes in the age of the forest and reductions in the size of the land base available for timber production. As a result, the EA Board ordered T&C 105 that required MNR to produce and approve a new timber production policy and related implementation schedule by December 31, 1994.

T&C 105

MNR shall complete and submit for approval a new Timber Production Policy and related implementation schedule by no later than December 31, 1994. The Timber Production Policy shall be updated thereafter every five years.

- *(a) The Timber Production Policy shall be prepared in consultation with the public generally and with input from the various advisory committees described in Appendix 1.*
- *(b) The Timber Production Policy shall provide clear quantifiable objectives for a sustainable level of harvest and regeneration on a 20-year projection as well as for the five-year term of the policy. These objectives shall be provided for the entire Area of the Undertaking and for all individual management units.*
- *(c) The Timber Production Policy shall develop estimates of funding required to meet regeneration objectives for the Area of the Undertaking and for individual management units.*
- *(d) The sustainable harvest level and regeneration objective for the province in the updated Timber Production Policy shall be reported in the State of the Forest Report (Appendix 22, section 1(i))."*

Implementation Experience

While MNR's original intent was to update the 1972 Forest Production Policy, a significant change in strategic policy direction had occurred in the meantime. This change in direction necessitated a re-evaluation of the project in mid-1994 and the adoption of a completely new approach to determining timber production levels. The timber production policy that emerged from this new direction is known today as the policy entitled Forest Resource Assessment on Crown Lands in Ontario, commonly referred to as the 'Forest Resource Assessment Policy'.

The first version of the Forest Resource Assessment Policy was submitted and approved by MNR and endorsed by the Minister of Natural Resources in December 1994. The policy was presented to the Provincial Forest Policy Committee in May 1995. MNR's Deputy Minister released the approved interim policy in September 1995. At that time, the MNR land use and resource management planning process was about to undergo a major revision, and it was recognized that the policy would require a review and update prior to the five-year review required under T&C 105. For this reason, it was released as an interim policy document.

The Forest Resource Assessment Policy reinforced the strategic direction that was set out in the MNR policy document Direction '90s (MNR 1991e), the Policy Framework for Sustainable Forests, and the *Crown Forest Sustainability Act*. The new direction called for Ontario's Crown forests to be managed sustainably to provide a range of benefits, not just timber production. This shift in strategic direction also meant that MNR would no longer be setting provincial-level timber production targets using a top-down approach. Instead, the availability of forest resources for industrial use is determined from the bottom-up, using the process set out in the *Crown Forest Sustainability Act* and the FMP Manual. Harvest and renewal levels are now set at the management unit level following direction contained in the FMP Manual.

T&C 105 calls for this timber production policy to be updated every five years. The Forest Resource Assessment Policy contains a five-year update provision. In 1996-97 after the MNR land use planning system was changed, MNR reviewed and updated the policy before the normal five-year cycle had lapsed.

In 1998, following a review by the Provincial Forest Policy Committee, the MNR Deputy Minister approved the updated policy titled Forest Resource Assessment on Crown Lands in Ontario. These revisions provided consistency with, and included linkages to, Ontario's forest policy and legislative framework, regional land use planning, and forest management planning and reporting.

In 2000/2001, MNR staff reviewed the 1998 version of the policy to determine whether it was still current and relevant. At that time, it was felt that no significant changes were required to the overall policy direction and that a further review and update would occur in 2002. That review and update is now underway.

In 1997, MNR released the first forest resource assessment report entitled, An Assessment of Ontario's Forest Resources (MNR 1997g). This report provided current information and long-term estimates of supply for each of MNR's three administrative regions. The most recent assessment is included in Ontario's State of the Forest Report, 2001 and includes forecasts of wood supply by management unit, based on current approved FMPs (MNR 2002e). Also included is the Report on Wood Supply in Ontario (MNR 2002f), which provides regional wood supply projections. MNR is currently preparing three regional wood supply strategies that will compare forecasts of wood supply against the current level of industrial demand, in order to identify potential shortages and possible opportunities.

Analysis of Implementation Experience

Significant changes occurred in MNR policy direction during the development of a replacement for the 1972 Forest Production Policy. This resulted in a different policy than the EA Board had perhaps expected.

This new direction moved forest management in Ontario beyond the narrow, timber-oriented, sustained yield approach for which MNR had been criticized at the EA hearings, towards sustainable forest management. With the implementation of the Policy Framework for Sustainable Forests (MNR 1995d) and the *Crown Forest Sustainability Act*, the focus has shifted to the sustainability of the forest as the first priority. The principles of sustainability are reflected in the current version of Forest Resource Assessment of Crown Lands in Ontario. The policy provides for flexibility to accommodate local issues and variations in environmental, economic and social conditions. At the same time, it identifies common principles and provides for the establishment of forest sustainability criteria indicators and standards against which Ontario's forest resources will be assessed.

MNR adopted a different approach than the 1972 Forest Production Policy, but has met the requirements of T&C 105. Compliance with T&C 105 was raised before the EA Board when it reconvened to review the draft FMP Manual in 1995. The EA Board concluded that MNR's approach complied with the term and condition (Koven and Martel 1995, Page 17).

The Forest Resources Assessment Policy was prepared in consultation with the public and with the advice of the Provincial Forest Policy Committee. The policy provides direction for forest resource assessment, and supports land use and forest management planning decisions. Forest management plans establish harvest and regeneration objectives to provide for sustainable forest management.

The policy does not contain estimates of funding to meet regeneration objectives for the Area of the Undertaking, nor for individual management units. These estimates are instead provided for through the regulated FMP Manual that requires that each FMP provide a forecast of the level of forest renewal and related expenditures required to meet plan objectives for the management unit. Total forest renewal expenditures for the province are reported annually in the Annual Report on Forest Management.

Since 1995, the *Crown Forest Sustainability Act* has provided for funding for forest renewal by directing a portion of the Crown charges paid by the forest industry to the Forest Renewal Trust and Forestry Futures Trust. These trusts provide the necessary funding to meet forest renewal objectives for each management unit. Funding requirements are determined at the management unit level subject to rates set by the government. These trusts have proven to be a better mechanism for securing long-term funding for forest renewal than the traditional mechanisms of annual government budget allocations that were of concern to the EA Board.

The policy direction contained in Forest Resources Assessment on Crown Lands in Ontario reinforces strategic direction set out in other MNR policy documents. MNR no longer sets provincial-level timber production and renewal targets. Instead, the level of harvest and renewal is determined at the individual management unit level to meet the various objectives - both timber and non-timber - set out in the forest management plan.

MNR will continue to report to the public on harvest and renewal levels, and on regeneration expenditures.

MNR recommends that T&C 105 is no longer required and should be deleted.

Recommended Term and Condition

MNR recommends that T&C 105 be deleted.

3.5.4.7 Roadless Wilderness Areas Policy

Current Requirement

The EA Board required MNR, through T&C 106, to develop a provincial policy on roadless wilderness areas by May of 1997.

> ***T&C 106***
>
> *Within three years of this approval, MNR shall develop a provincial policy on roadless wilderness areas.*

Implementation Experience

In 1997, MNR released Ontario's Approach to Wilderness: A Policy (MNR 1997h). The policy stated that wilderness values would be accounted for under the auspices of land use planning, resource management planning, policy, legislation, and management programs developed in support of sustainable natural resource management in Ontario. This policy:

- Confirms Ontario's commitment to wilderness protection through existing Wilderness Park and Wilderness Zone targets, and provides direction that will result in the completion of Ontario's system of Wilderness Parks.
- Addresses the contribution of other parks and protected areas to the protection of wilderness values.
- Addresses the consideration of wilderness values through ongoing management activities on the intervening landscapes and waterscapes outside parks and protected areas.

The first two commitments are being addressed in a variety of ways. Ontario's Living Legacy Land Use Strategy provided for an increase in parks and protected areas to 12% of Crown lands within the Area of the Undertaking, and promoted the completion of the Ontario Parks class system. In southern Ontario, MNR and its partners are implementing a variety of programs to protect natural areas and wilderness values. These include Nature's Best: Ontario's Parks and Protected Areas: A Framework and Action Plan (MNR 1997i); Carolinian Canada; the Conservation Land Tax Incentive Program; and Legacy 2000 - MNR's partnership with the Nature Conservancy of Canada.

To address the third commitment, MNR formed the Wilderness Working Group. This group is an internal committee assessing current programs to determine whether additional techniques are required to manage wilderness characteristics on intervening landscapes and waterscapes within the Area of the Undertaking.

In February 1999, the Ministry of the Environment advised MNR that a request for an investigation had been received under the *Environmental Bill of Rights* with respect to MNR's compliance with T&C 106. The Ministry of the Environment undertook a review and on April 13, 1999, concluded MNR was in compliance with this term and condition.

Analysis of Implementation Experience

In Ontario's Living Legacy Land Use Strategy, MNR concluded that the wilderness park class target had been achieved to the extent possible within the Ontario Living Legacy planning area.

Although no new wilderness parks were created, several of the existing wilderness parks were expanded. By definition, wilderness parks and wilderness zones in other types of parks are roadless.

Roads and other types of development are limited in many parks and protected areas. The land use strategy created 378 new or expanded protected areas, including seven protected areas that are larger than 50,000 hectares. Although not classified as wilderness parks, many of these protected areas provide wilderness characteristics.

Consideration for roads within parks and protected areas generally occurs through park planning. The land use strategy, and subsequently the Ontario Forest Accord, established broad direction concerning road access within these newly created parks and protected areas. In general, these areas are not to have roads within their boundaries, although provisions for roads have been made in some cases.

MNR is continuing to provide direction for the management of wilderness values on intervening landscapes and waterscapes. This is occurring through a variety of existing policies and ongoing resource management and operational initiatives. For example, through access restrictions it is possible to maintain the undeveloped and roadless nature of Crown land areas that exhibit wilderness characteristics.

MNR met T&C 106 with the wilderness policy approved in 1997. The policy is in place and MNR is committed to following the direction provided by the policy. The policy committed MNR to establish wilderness parks and wilderness zones, which was achieved through Ontario's Living Legacy Land Use Strategy.

Recommended Term and Condition

MNR recommends that T&C 106 be deleted.

3.5.4.8 Professional and Technical Training Programs

Current Requirement

The EA Board recognized the need to ensure that the knowledge of persons involved in the planning and implementation of forest management activities is continually upgraded. T&C 109 and Appendix 23 required MNR to further develop comprehensive professional and technical training programs in eight subject areas.

> ***T&C 109***
>
> *MNR shall further develop comprehensive professional and technical training programs to ensure that the knowledge of those persons involved in the planning and implementation of timber management activities is continually upgraded. Particulars of this condition are set out in Appendix 23.*

> ***Appendix 23: Continuing Education and Training***
>
> 1. *Training programs shall be developed, or further developed, in the following subject areas:*
>   - *(a) the timber management planning process and its application;*
>   - *(b) the application of implementation manuals;*
>   - *(c) data collection requirements and methodologies;*
>   - *(d) those analytical methods for assessing social and economic advantages and disadvantages of timber management activities which are applicable to Ontario's timber management operations, (as described in Condition 104);*
>   - *(e) monitoring requirements and methodologies;*
>   - *(f) the results of relevant scientific research;*
>   - *(g) other specific professional and technical training in specific subject areas, as training needs are identified from time to time;*
>   - *(h) expand training for woodland workers to cover all implementation manuals and aspects of TMP that MNR believes would be useful for field operations.*

Implementation Experience

Forest management planning training is a key training program in MNR. MNR has developed a modular approach to FMP training. This training has been provided to FMP planning teams and local citizens committees, at strategic stages in the planning process, with the introduction of the new FMP Manual in 1996. Each of the eleven FMP training modules is delivered annually by MNR's regional and main office planning staff, using a curriculum that is developed and updated with the assistance of MNR staff from other program areas. MNR offers additional planning-related training, such as a module on the development of an annual work schedule and annual reporting requirements. MNR also develops and delivers training to support the application of new models used in forest management planning. This includes training for social and economic impact models as well as strategic landscape and wildlife habitat models.

Training regarding the application of implementation manuals occurs as part of annual FMP training modules. Training for new implementation manuals is developed and delivered as part of the guideline preparation process, cognizant of the needs of those implementing the guide.

There have been a number of new training programs developed and implemented by MNR with regard to data collection requirements and methodology. For example, extensive training in the use and application of MNR's new ecological land classification has been offered to MNR field staff, forest industry staff and consultants. Training is also provided to MNR, the forest industry, and other interested individuals in the growth and yield program.

Since the EA Approval and the enactment of the *Crown Forest Sustainability Act*, a new business relationship between MNR and the forest industry has shifted more responsibilities for forest management to the industry. The forest industry is now responsible for the operational implementation of forest management plans, including the marking of harvest boundaries, silvicultural effectiveness monitoring and compliance monitoring. In addition to the training provided by MNR on such subjects as tree marking, scaling, culvert installation and compliance monitoring, the forest industry also provides training to woodland workers on items such as boundary marking and road location.

In 1996, MNR created the Forest Management Competency Program to ensure that MNR staff and its partner workforces are adequately qualified to manage Ontario's forests using the best available science and technology.

The Forest Management Competency Program is designed to set skills and knowledge standards, develop and deliver learning mechanisms, assess competency, recognize achievements and maintain individual skills and knowledge. The program uses a proactive approach to addressing changing MNR and forest industry workforce requirements. The program reviews and responds to competency needs identified by MNR and the forest industry, independent forest audits, reports of the Provincial Auditor and others.

The Forest Practices Competency Partnership, which was formed in November 1999, has members from both forest industry and MNR. The goal of this group is to develop and implement a co-operative approach to delivering competency-based training to the forest workforce, including equipment operators. As a result of this partnership, training has been developed for woodland workers in the application of MNR's implementation manuals (e.g., Instructor's Manual - Erosion and Sediment Control at Water Crossings on Forest Access Roads (Forest Practices Competency Partnership 2000a).

It should also be noted that external bodies to both MNR and the forest industry contribute to professional and technical training for those persons involved in planning and implementation of forest management activities.

Training programs have become important requirements for those forest companies seeking forest certification through organizations such as the Canadian Standards Association, the International Standards Organization and the Forest Stewardship Council. These organizations generally require education and training programs to be in place to ensure that individuals who are responsible for managing the forest are continually upgrading their knowledge and skills.

The Ontario Professional Foresters Association has a Continuing Forestry Education Program available to anyone involved in resource management, including all forestry professionals, Registered Professional Foresters, forestry graduates, resource technicians and biologists. The association requires members to participate in continuing education to maintain and increase their knowledge and skills.

Analysis of Implementation Experience

MNR is committed to staff training and development so that those engaged in planning and implementation of forest management activities will have leading edge resource management skills and knowledge necessary to set the benchmark in resource management practices. MNR's commitment is described in Beyond 2000, MNR's strategic direction document (MNR 2000i). MNR also works in partnership with the forest industry and others, providing information, training and infrastructure to improve the skills and knowledge of forestry professionals and woodland workers.

Forest management planning training continues to be one of the key training programs in MNR. It has been very successful in providing planning teams, and others involved in forest management, with an upgraded and comprehensive knowledge of Ontario's planning process.

The continued application and evolution of the Forest Management Competency Program will maintain high standards of knowledge and skill, and provide for the continuous improvement of forest management workforce competency, both within MNR and the forest industry. The Forest Practices Competency Partnership will allow MNR and the forest industry to work together to deliver professional and technical training, responsive to changing training needs.

While MNR plays a significant role in profession and technical training programs, this responsibility is shared with others. The forest industry provides training for woodland workers to ensure compliance with MNR's implementation manuals. Forest companies seeking to maintain or acquire forest certification are required to provide training and upgrading for their forest practitioners and workers. The Ontario Professional Foresters Association is also implementing a program to ensure its members maintain their professional competencies.

MNR has met the requirements of T&C 109 and Appendix 23 through the development of a wide range of training programs delivered by MNR directly and in partnership with others. MNR recommends that T&C 109 be amended to reflect MNR's continued commitment to ensure training programs are maintained so that the knowledge of those persons involved in forest management is continually upgraded. MNR recommends that Appendix 23 be deleted to allow for a wide array of training programs responsive to the changing needs of MNR, the forest industry and others involved in forest management activities.

Recommended Term and Condition

MNR recommends that T&C 109 and the associated Appendix 23 be deleted and replaced with the following:

46. MNR shall ensure comprehensive professional and technical training programs are maintained so that the knowledge of those persons involved in the planning and implementation of forest management activities is continually upgraded.

3.5.4.9 District Land Use Guidelines

Current Requirement

At the time of the EA hearings, MNR had in place District Land Use Guidelines that provided direction on permitted uses on Crown land. Those guidelines had been developed, with considerable public involvement, in the early 1980s. The EA Board required MNR, through T&C 110, to revise these District Land Use Guidelines and report on their status.

T&C 110

Revisions to the District Land Use Guidelines designating permitted land uses throughout the Area of the Undertaking shall be made in consultation with the committees listed under Appendix 1. MNR shall report on the status of the District Land Use Guidelines undertaking in the Annual Report on Timber Management to the Legislature pursuant to Condition 82, and in the report to the Minister of the Environment and Energy pursuant to Condition 114(a)(v).

Implementation Experience

Since the development of the District Land Use Guidelines in the early 1980s, MNR has been implementing the direction contained therein and amending that direction as required, with public input. During the early 1990s, MNR initiated a review of its land use planning system.

In 1995, the Ontario government released recommendations for an improved MNR land use planning system. The recommendations were modified and became the first step in proposing changes to the land use planning process from the former District Land Use Guidelines amendment process.

In February 1997, the Lands for Life land use planning process was initiated. New committees, made up of citizens with a diverse range of interests, known as Round Tables, were established for each of three ecologically based planning regions within the Area of the Undertaking: Great Lakes-St. Lawrence, Boreal East and Boreal West. The Round Tables were responsible for making recommendations to MNR on Crown land use designations that offered protection for natural heritage areas, promoted resource-based tourism, strengthened the forest industry and provided a better future for jobs and communities. A consolidated Round Table report led to the Proposed Ontario's Living Legacy Land Use Strategy in March 1999.

In July 1999, following public review, Ontario's Living Legacy Land Use Strategy was announced. It recommended the largest expansion of Ontario's system of parks and protected areas in the province's history. The strategy also recommended a new land use category called Enhanced Management Areas, which covered about 3.6% of the Area of the Undertaking. These areas, which are not a park or protected area, are intended to maintain a range of values. Specific resource management uses may be subject to conditions that are designed to support the values that make the area special, in a manner that generally has no impact on wood supply.

Associated with the land use strategy was an agreement signed in 1999 between Ontario's forest industry, a coalition of environmental groups known collectively as the Partnership for Public Lands and the MNR. This agreement is known as the Ontario Forest Accord. The Accord reflects agreement on recommended protected areas, the wood supply needs of the forest industry and also provides a means to protect additional areas in the future.

The involvement of the committees identified in the EA Approval in land use planning policy changes varied. The Provincial Forest Policy Committee was provided with information during the Lands for Life land use planning process. The Provincial Forest Technical Committee was provided with updates where relevant. Regional Advisory Committees were not established until after the land use planning process concluded. However, the Round Tables provided the similar function as Regional Advisory Committees and several former members of the Round Tables became Regional Advisory Committees members. Local Citizens Committees also had a variable degree of involvement in land use planning processes, including amendments to District Land Use Guidelines.

Ontario's Living Legacy Land Use Strategy replaces local land use designations contained in District Land Use Guidelines where they address the same topics or areas. MNR is currently producing a Land Use Atlas, which is a provincial level amalgamation of District Land Use Guidelines and the land use changes resulting from the land use strategy. This compendium will effectively replace the District Land Use Guidelines. The Land Use Atlas will be readily accessible to the public through the Internet.

The status of revisions to District Land Use Guidelines has been reported in all Provincial Annual Reports on Forest Management.

Analysis of Implementation Experience

The most significant change that has affected District Land Use Guidelines since the EA Approval has been the Lands for Life land use planning process, which included extensive public consultation. The resulting addition of 378 new parks and protected areas, totalling 2.4 million hectares, means the internationally recognized target for parks and protected areas of 12% has been achieved within the Area of the Undertaking. A new land use category has been established for some of the intervening areas, called Enhanced Management Areas. Detailed implementation strategies for these areas will be developed with the participation of stakeholders.

The permitted land uses for those areas outside of existing and proposed parks and protected areas have changed little from what was shown in the District Land Use Guidelines. However, where amendments to District Land Use Guidelines have occurred, MNR has sought input from the public.

Since the EA Approval, MNR's land use planning process has changed significantly. Public consultation continues to be a key component of any Crown land use planning process. The Land Use Atlas will help to facilitate future dialogue on land use changes. The Land Use Atlas will also make information about proposed and approved changes to land use policies readily accessible to the public.

In recognition of the changes in the provincial land use planning processes, MNR recommends that T&C 110 be deleted.

Recommended Term and Condition

MNR recommends that T&C 110 be deleted.

3.5.5 Public Education on Forest Management

Current Requirement

The EA decision speaks of the need to "expand" MNR's education efforts "to help give the general public a better understanding of timber management" (Koven and Martel 1994, Page 408). It was felt that the public needed to better understand the origins of the boreal forest, the need for disturbance to create new forests (including a discussion on clearcuts), and the use and need for pesticides, "so that the public will understand the process being approved by the board" (Koven and Martel 1994, Page 408). The EA Board envisioned that if the education project involved some of the parties to the EA hearings, different views would be presented along with the scientific evidence, thus allowing the public to choose for themselves among the various "positions". This resulted in T&C 92, which includes the requirement for MNR to expand the public education program, in those three specific topic areas, with input from the intervenors from the EA hearings. T&C 91 directed MNR to prepare a brochure that describes MNR's forest planning system in plain language.

T&C 91

Within one year of the final approval, MNR shall prepare a brochure for general public distribution which will outline the timber management planning process in simplified form and provide a glossary of terms which are commonly used. The brochure will also outline how and when the public may become involved in the timber management planning process, and will provide an explanation of the bump-up provisions. The brochure will be available in English, French and native languages.

T&C 92

MNR shall expand its public education program dealing specifically with the topics of: (a) the origins of the boreal forest and the need for disturbance to create new forests; (b) the use of clearcut harvesting and the role it plays in regeneration of the forest; and (c) the use of pesticides in timber management. MNR shall invite input from the intervenors of the Timber Management Class Environmental Assessment Hearing in the preparation of this initiative.

Implementation Experience

In the spring of 1995, MNR undertook a comprehensive information collection process to inventory current and potential forest education and awareness materials internally and externally to MNR, and determine how to best meet T&C 92. All of the intervenors from the EA hearings were invited to participate in this information gathering. As well, the public was consulted during the process. This resulted in the creation of a report with recommendations in the spring of 1996, which included a catalogue of forest and forestry education resources in Ontario. This exercise also resulted in the development of a public education strategy.

The strategy was subsequently reviewed to reflect a new business approach by MNR. New agreements were negotiated by MNR to have external groups assume management of the programs, with MNR continuing to provide resource management expertise. For example, MNR subsequently entered into a partnership agreement with the Ontario Forestry Association to administer and deliver Focus on Forests (MNR 1989a, 1992b), a curriculum-based primary/secondary education program that covers a wide-range of subjects, including the use of pesticides and clearcutting. Other education programs that MNR entered into partnerships with external agencies to administer and deliver include Project Wild, a wildlife-based education program (Canadian Wildlife Federation 2001), and Fishways, a fisheries management education program (MNR 1991c, MNR 1991d).

In 1992, MNR published Focus on Fire (MNR 1992c) a similar curriculum-based educational supplement to introduce teachers and students to forest fires, and provided this program to the Ontario Forestry Association to administer and deliver. The Focus on Fire and Focus on Forests programs have recently been updated by the Ontario Forestry Association with the input and support of a number of environmental educators, non-governmental organizations, and MNR and the forestry industry. These updates include activities on forest pest and pesticide use, as well has natural disturbances such as fire, and clearcutting. In that same year, MNR also introduced the Ontario's Forests web site (MNR 2002g) and began providing the public with a broad array of information and education materials. This includes an interactive e-mail system where all inquiries on forestry matters and issues are addressed in a timely fashion.

In conjunction with T&C 91, MNR has produced several information products. A Guide to Forest Management Planning in Ontario is a brochure that introduces the public to forest management practices in plain language, and provides further information on forest management planning, describes opportunities for public consultation and a glossary of terms (MNR 1997j). This brochure was produced in English, French and Native languages, within one year of the regulation of the FMP Manual.

In addition, in 1998, MNR published Ontario Forests - Management for Today and Tomorrow, which provides an overview of Ontario's forests, and addresses the laws, policies and practices (MNR 1998f). This was designed as a basic information product for the public at large. The subjects of the boreal forest, clearcutting, fires and the use of pesticides are addressed as part of the document. A plain language pamphlet was produced for the public in 2000, describing the forest regions of Ontario, including a description of the boreal forest (MNR 2000j).

In conjunction with T&C 4 and 109, MNR has developed specific education and training for individuals involved in the Local Citizens Committees. This includes workshops, presentations recorded on videos and resources packages.

The Ontario Forestry Association also leads a range of educational initiatives which address this term and condition. Envirothon and National Forest Week programs include the three subjects areas of T&C 92, and in most cases, have been developed independently of government and industry.

As a follow-up to the Forest Management Guide for Natural Disturbance Pattern Emulation, MNR is producing an educational publication Nature's Way - the Guide for Natural Disturbance Pattern Emulation for Forest Harvesting. This educational publication will be generally distributed and available upon request.

MNR is updating the publication Ontario Forests - Management for Today and Tomorrow (MNR 1998g), which is used as a foundation for education programming, and to address the subjects identified in T&C 92 in detail. As well, Ontario's State of the Forest Report, 2001 presents information on the status of the forest management programs in meeting criteria for sustainable forest management.

MNR is also developing a brochure to be titled The Use of Pesticides in Ontario (working title) to inform the public about the use of pesticides in the management of Ontario's forests. It is scheduled to be completed in 2002.

Analysis of Implementation Experience

MNR and its partners provide a wide range of public education activities related to forest management. Educational products are delivered in partnership with other groups and improve the public's understanding of ecological sustainability and a commitment to resource stewardship. Through partnerships, MNR reaches a broader audience, often working directly with educational professionals.

The topics of the boreal forest, natural disturbances, clearcutting and pesticide use have been addressed in educational products developed and delivered by MNR and its partners. In many instances, these individual topics have been addressed in the overall context of natural resource management.

MNR has involved intervenors from the EA hearings in the public education process. MNR supports and recognizes the importance of continuing to work with and learn from stakeholders in the planning and delivery of effective public education.

As part of this Timber Class EA Review, MNR is proposing changes to the forest management planning process. Upon revision to MNR's FMP Manual, the forest management planning brochure, originally created in response to T&C 92, will be updated to inform the public of these and any other significant changes to forest management planning.

Recommended Term and Condition

MNR recommends that T&Cs 91 and 92 be deleted and replaced with the following:

47. (a) MNR shall continue to participate in public education regarding the management of Ontario's forests, both directly and in partnership with organizations involved in the administration and delivery of educational programs in forestry.

(b) Upon each significant revision of the Forest Management Planning Manual, MNR shall update the brochure which outlines the forest management planning process in a simplified form. The brochure will be available for general public distribution in English, French and native languages.

3.6 Additional Proposals Resulting From Public Consultation

During the course of public consultation on the draft Timber Class EA Review, many proposals were brought forward for MNR to consider in its final submission. These proposals were reviewed by MNR and resulted in many changes that were made to the terms and conditions and the text contained in the draft Timber Class EA Review. In addition, two new terms and conditions have been developed by MNR based on suggestions from public consultation. These are recommended by MNR for inclusion into the extension and amendments to the Timber Class EA Approval.

3.6.1 Wood Supply Strategy

Discussion

The forest industry and other stakeholders have identified the need for MNR to develop a wood supply strategy to focus effort on addressing issues related to projected declines in wood supply. These declines are primarily associated with the changing age class structure of Ontario's forests. Future wood supply reductions pose a risk to the economic sustainability of northern and central Ontario and to forest dependent communities located in these regions. Several northern communities have identified this as a concern to be addressed.

Accordingly MNR is recommending the development of a provincial strategy to offset projected reductions in wood supply, thereby mitigating effects on the forest industry and many forest dependent communities. MNR will work with the forest industry and other partners to mitigate wood supply issues pursuant to the provincial strategy.

Recommended Term and Condition

MNR recommends the following term and condition:

48. (a) MNR, in consultation with the forest industry and other interested parties, shall develop a provincial wood supply strategy comprised of regional wood supply strategies. This strategy will include the following components:
  - **(i) an examination of past harvesting levels;**
  - **(ii) a long term forecast for industrial wood supply, by species group;**
  - **(iii) the forecast demand for industrial wood supply, by species group;**
  - **(iv) an identification of anticipated wood supply issues; and**
  - **(v) a description of strategies to address the identified wood supply issues.**

(b) All strategies contemplated shall be consistent with the requirements of the *Crown Forest Sustainability Act* and, where applicable, will support the Ontario Forest Accord. The provincial strategy will be developed within one year of the extension and amendments of this EA Approval. MNR will seek the advice of the Provincial Forest Policy Committee in the development of the provincial strategy, and will provide an opportunity for public review and comment on the provincial strategy.

(c) Implementation of these strategies will be reported in the State of the Forest

Report.

3.6.2 Horse Logging

Discussion

During the course of public consultation, interest was expressed in examining opportunities for horse logging. Horse logging can be used in harvesting timber on a variety of sites, including some that may otherwise be unavailable for harvest. It may also provide additional employment opportunities in northern and rural Ontario.

MNR is recommending a term and condition regarding horse logging on Crown forests.

Recommended Term and Condition

MNR is recommending the following term and condition:

49. Where horse logging businesses are established or where business interest is demonstrated to establish viable new horse logging ventures, forest management plans shall make available for horse logging up to two percent of the available harvest area. In making this wood available, existing wood supply commitments to forest resource processing facilities shall be maintained.

3.7 Administration of this EA Approval

Administration of this EA Approval is addressed in this section and includes phase-in provisions, five-year EA reporting and monitoring, amending provisions and EA Approval records.

Phase-in provisions for this EA Approval address the effective date of the extension and amendments of this EA Approval, amendments to the FMP Manual and the timing of when terms and conditions come into force.

Five-year EA reporting and monitoring provisions address the requirements for the content and the timing of the Five-Year EA Report on the progress of implementing this EA Approval.

MNR is recommending new amending provisions for this EA Approval that provide for amendments by MNR, the Ministry of Environment and Energy and other persons. These can be minor or major amendments. These amending provisions provide an opportunity for continuous improvement of this EA Approval to address new information or change in circumstances affecting the EA Approval. They have been modelled on other more recently approved class environmental assessments in Ontario.

This section also describes provisions for maintaining records related to this EA Approval.

3.7.1 Phase-In Provisions for this EA Approval

Current Requirement

T&C 113 (a) established the nine-year duration of the EA Approval and the effective date.

T&C 113 (b) and (c) provided direction as to when the terms and conditions of the EA Approval are to come into force. Following completion of the FMP Manual, planning related terms and conditions were to come into effect when the plans were amended or renewed. The timing for the implementation of other terms and condition depended upon the provisions found in individual terms and conditions.

T&C 90 (a) and (b) established a process to ensure that the MNR's former Timber Management Planning Manual for Crown Lands in Ontario was satisfactorily revised to incorporate planning related terms and conditions required by the EA Approval. The process gave MNR six months in which to revise its Timber Management Planning Manual, and it gave the Ministry of Environment and interested persons an opportunity to review the new draft manual and submit comments. Written comments were required within three months of receipt of the new draft manual. MNR was given three months to consider the comments and further revise its draft. An additional one-month period was identified for parties to submit requests for clarification or further specific amendments to the EA Board. No new evidence was to be considered. The only consideration of the EA Board was whether the new draft manual fairly reflected the terms and conditions of EA Approval.

T&C 113

(a) This approval shall remain in effect for nine years. The first year shall be deemed to start on the day this decision is received by the Minister of the Environment and Energy

(b) Upon completion of the revisions to the Timber Management Planning Manual, in compliance with Condition 90, the timber management planning process and Plan content requirements described in these terms and conditions shall come into force at the time of the next amendment to the existing Timber Management Plan with whatever modifications are necessary in the circumstances, or the next scheduled or unscheduled renewal of the Timber Management Plan for each forest management unit.

(c) All other terms and conditions shall come into force as provided in these terms and conditions of approval.

T&C 90

(a) Within six months of the final approval of this undertaking, MNR shall produce draft revisions to the Timber Management Planning Manual for Crown Lands in Ontario ("TMPM"), incorporating the timber management planning process and Plan content requirements described in these terms and conditions. Prior to finalization of revisions to the manual, MNR will provide the Director of the Environmental Assessment Branch, Ministry of Environment and Energy, and other interested persons with an opportunity to review the draft revisions for consistency with the timber management planning process and Plan content requirements described in these terms and conditions. Any person who wishes to comment shall provide comments in writing to the Ministry of Natural Resources within three months of receipt of the draft revisions to the TMPM. The Minister of Natural Resources shall consider those comments, and finalize the revisions to the Timber Management Planning Manual within three months thereafter.

(b) Upon completion of the revised TMPM by MNR as provided for in Condition 90(a), parties will have one month within which to make submissions to this hearing panel in the event clarification is required regarding the Board's decision as reflected by MNR in the revised TMPM. All submissions shall be in

> *writing and shall set out the specific amendment requested to MNR's revised TMPM. No new evidence will be considered by the Board in deciding any dispute that may arise in respect of the TMPM, and the Board's consideration shall be strictly limited to issues as to whether the terms and conditions of approval are fairly reflected in the TMPM.*

Implementation Experience

Term of Approval

The EA Approval became final by operation of law on May 19, 1994 as described in T&C 113(a) and in accordance with the *Environmental Assessment Act*. The EA Approval was to remain in effect for a nine-year term.

Phase-In

As provided for by T&C 113(b), the requirements of the FMP Manual to prepare and implement forest management plans have been phased-in. With the approval of the 2002 forest management plans, the requirements of the FMP Manual will have been applied once on each management unit in the Area of the Undertaking. Other terms and conditions were implemented according to the dates specified for them.

Timber Management Planning Manual Revisions

The Timber Management Planning Manual was revised according to the process required by T&C 90. These revisions also addressed the requirements of the new *Crown Forest Sustainability Act* regarding an FMP Manual. These revisions resulted in the FMP Manual that was judged by the EA Board to fairly incorporate all of the EA Approval's requirements. The FMP Manual is regulated under the *Crown Forest Sustainability Act*.

As part of this process MNR produced a draft FMP Manual in May 1995, which included a review by interested parties and a revision by MNR. The EA Board convened a meeting of the interested parties for three days in June and August of 1995 to review submissions regarding the incorporation of the EA Approval's planning requirements into the FMP Manual. In October of 1995 the EA Board issued its Report on the Approval of the Class EA for Timber Management and directed MNR to make a number of further revisions to the draft FMP Manual. MNR complied with the direction from the EA Board and produced a final FMP Manual, which was formally regulated under the *Crown Forest Sustainability Act* in September 1996.

Analysis of Implementation Experience

Term of Approval

The term of approval granted by the EA Board was for nine years, ending May 19, 2003. In granting this nine-year term of approval, the EA Board recognized that implementation of its terms and conditions would "take several years and still more time to see the effects in the slow growing-forests of Northern Ontario."

This Timber Class EA Review addresses how MNR has complied with the requirements set out in the EA Approval and how, through its implementation, MNR has provided for the protection, conservation and wise management of the environment. The requirements of the EA Approval are now normalized in MNR's day-to-day business and the business of many partners and stakeholders. Many of the forest management concepts and requirements set out in the EA Approval are now incorporated in legislation and regulations.

In preparing this Timber Class EA Review, MNR has examined the term of approval found in recent class environmental assessment approvals. For example, class environmental assessments such as the Municipal Class Environmental Assessment and the Class Environmental Assessment for Provincial Transportation Facilities, have been approved with no fixed term. It is also noted that these class environmental assessments have provided opportunities for the Ministry of Environment and Energy and members of the public to propose amendments to the EA Approval in order to allow for its continuous improvement. MNR has recommended similar amending provisions in this Timber Class EA Review. Therefore, given the experiences of the past eight years, and the proposals for continuous improvement by way of amending provisions, MNR is recommending that this approval be extended with no fixed term of expiry. MNR is also recommending regular five-year reporting to the Ministry of Environment and Energy and the public on implementation of this EA Approval as discussed in Section 3.7.2.

Phase-In

The wording of Conditions 113(b) and (c) related to phase-in has been problematic for the public and MNR, and as a result questions arose as to the required timing of implementation of certain terms and conditions of the EA Approval.

The timing of planning related terms and conditions was relatively clear; however, the timing for implementation of other terms and conditions depended upon their particular wording, and was thus subject to some interpretation. Differences in interpretation were largely responsible for the judicial review application described in Section 1.2.5.

MNR is making recommendations for the continuation of this EA Approval and notes that the time-specific requirements of the original terms and conditions have been met, or will be met during the nine-year term of the 1994 approval. Therefore, future phase-in considerations are largely restricted to the term and condition regarding the amendments to the FMP Manual.

MNR is recommending that the terms and conditions of this extended and amended EA Approval be phased in under two categories: those related to forest management planning, and all others.

Forest management planning related terms and conditions are to be incorporated by way of amending the FMP Manual within 12 months of the extension and amendment of this EA Approval, and will then be subject to review and comment in accordance with provisions of the *Crown Forest Sustainability Act*. Once the FMP Manual takes effect under the Act, the requirements of the newly amended FMP Manual will be phased in on a management unit by management unit basis with the initiation of the next forest management planning process.

MNR recommends that all other terms and conditions come into force immediately, except as otherwise specified in the term and condition.

Timber Management Planning Manual Revisions

Approximately 28 months elapsed from the EA Board's decision until an FMP Manual was prepared, reviewed and regulated under the *Crown Forest Sustainability Act*. This process incorporated the planning related requirements of the EA Approval into the FMP Manual.

MNR's experience with the revision process shows that there was, and will likely continue to be, significant public interest in amendments to the FMP Manual. The *Crown Forest Sustainability Act* (Section 68(4)) requires public review and comment on proposed amendments to the FMP Manual. A draft regulation to provide for a process for public review and comment on amendments to the FMP Manual is being developed at this time.

MNR's previous experience also indicates that after extension and amendments to the EA Approval, sufficient time must be provided to prepare the necessary amendments to the FMP Manual. Therefore MNR is recommending a 12-month period to prepare proposed amendments to the FMP Manual. Should additional amendments to the FMP Manual be required in the future, MNR will ensure that those amendments will also comply with the EA Approval.

MNR is recommending an extension of and amendments to this EA Approval. MNR is also recommending changes to phase-in provisions and the manner in which future amendments to the FMP Manual will take effect.

Recommended Terms and Conditions

MNR recommends that T&Cs 90 and 113 be deleted and replaced with the following:

50. The extension and amendments of this EA Approval shall come into force on the latter of May 19, 2003, or the date of the final decision by the Minister of Environment and Energy to approve the extension and amendments.

51. The terms and conditions of the extended and amended EA Approval shall be phased in as follows:
- **(a) The Forest Management Planning Manual shall be amended as follows:**
  - **(i) MNR shall propose amendments to the Forest Management Planning Manual by incorporating the forest management planning related terms and conditions of this EA Approval within 12 months of the latter of May 19, 2003, or, the date of the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval; and**
  - **(ii) Those proposed amendments to the Forest Management Planning Manual shall be subject to review and comment by the public in accordance with the *Crown Forest Sustainabiltiy Act*, and its regulations.**
- **(b) Those proposed amendments to the Forest Management Planning Manual shall also be reviewed by the Ministry of Environment and Energy for consistency with the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval.**
- **(c) Once the amended Forest Management Planning Manual takes effect, in accordance with the *Crown Forest Sustainability Act*, Section 68(10), the requirements of the amended Forest Management Planning Manual will be applied on a management unit by management unit basis with the initiation of the planning process for:**
  - **(i) the next minor or major amendment to an existing forest management plan,**

with whatever modifications are necessary in the circumstances;

(ii) the next scheduled or unscheduled renewal of a forest management plan; or

(iii) a contingency plan.

(d) All other terms and conditions shall come into force immediately, except as otherwise specified in these terms and conditions.

(e) MNR shall maintain, on its Internet web site, the most current version of the Forest Management Planning Manual.

3.7.2 Five-Year EA Report and Monitoring of this Timber Class EA Approval

Current Requirement

The EA Board required reporting on the implementation of the EA Approval and also required MNR to report publicly and regularly on timber management activities.

Regarding the EA Approval, progress reports are required to provide a description of the results achieved, including new methods or technologies for use in forest management, and are to make recommendations for amendments to this EA Approval, where appropriate.

The EA Board also required MNR to undertake a comprehensive review of the undertaking during the eighth year, and to make recommendations to the Minister of Environment and Energy, regarding an extension and amendments to this approval.

The EA Approval addressed this topic in two terms and conditions, as follows:

- T&C 111, requiring MNR to provide progress reports to Ministry of Environment and Energy on various aspects of the approval, and
- T&C 114, requiring MNR to carry out a comprehensive review of the undertaking during the eighth year of this approval.

With regard to regular public reporting, the EA Board required MNR to prepare Provincial Annual Reports on Timber Management and a State of the Forest Report, every five years. These reports provide additional information to the public regarding implementation of the EA Approval by describing provincial statistics on the Crown forest resource, its harvest, renewal, maintenance and other related matters. Section 3.3 of this Timber Class EA Review provides a description of these public reports. These reports are prepared by compiling information that originates from the management unit level, as described in Section 3.1.11 of this Timber Class EA Review.

The EA Approval addressed provincial-level reporting in two terms and conditions, as follows:

- T&C 82 and Appendix 20, requiring MNR to produce a Provincial Annual Report on Forest Management, to be tabled in the Legislature,
- T&C 84 and Appendix 22, requiring MNR to produce a provincial State of the Forest Report every five years, also to be tabled in the Legislature.

T&C 82

MNR shall produce a provincial "Annual Report on Timber Management" which shall be tabled in the Legislature. The contents of this report are listed in Appendix 20.

T&C 84

Every five years, MNR shall produce a provincial "State of the Forest Report" which shall be tabled in the Legislature. The contents of this report are listed in Appendix 22.

T&C 111

MNR shall provide progress reports on improvement of implementation manuals, advances in information collection and management, scientific research and technical development, and professional and technical training to the Director of the Environmental Assessment Branch, Ministry of Environment and Energy. In providing the foregoing information, MNR shall describe the results of any scientific research, pilot projects or case studies undertaken. These reports will describe any new analytical methods or technologies which have been developed for use in timber management, and shall make recommendations concerning whether the use of specific new technologies may require amendments to the approval for the undertaking. These reports shall be available to the public.

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T&C 114

(a) During the eight year of this approval, MNR shall undertake a review of this undertaking and submit that review to the Minister of Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:
  - *(i) A complete record of all amendments to the approval pursuant to Condition 112 for the undertaking during the term of this approval;*
  - *(ii) A complete record of all amendments to Timber Management Plans detailing their categorization as administrative, minor or major as set out in Condition 67 and Appendix 13;*
  - *(iii) A complete record of all bump-up requests, and their disposition, during the term of this approval;*
  - *(iv) The most recent five-year "State of the Forest" report, which is described in Condition 84 and Appendix 22;*
  - *(v) Progress reports on the studies and programs which are described in Conditions 24, 27, 52(e), 80, 81, 93 to 110 and Appendix 19;*
  - *(vi) Any additional documentation which MNR considers to be appropriate or necessary to support its recommendations for an extension of the approval of the undertaking;*
  - *(vii) An overview of the success and failure of public consultation reported by:*
    - *Local Citizens Committees and contained in supplementary documentation of Timber Management Plans,*
    - *Any similar statement resulting from the native consultation process, and*
    - *The issue resolution process;*
  - *(xi) a complete record of all Contingency Plans as set out in Condition 66 and Appendix 12;*
  - *(xii) a complete record of major problems identified through independent audit program as provided in Condition 86; and*
  - *(xiii) a complete record of estimated and actual spending to achieve regeneration objectives as provided for in Condition 38(a); Appendix 8, section 1(a)(iv); Appendix 18, section 1(o); Appendix 20, section 1(g); and Appendix 22, section 1(k).*

(b) The public shall be provided 60 days after the report is made public to make written comments to the Minister of Environment and Energy on the review documentation and any recommendations prepared by MNR.

(c) The Minister of Environment and Energy will determine whether the Class EA approval shall be extended beyond the term of this approval no later than six months after receiving MNR's review and recommendations.

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Appendix 20: Provincial Annual Report On Timber Management To The Legislature

1. The Annual Report on Timber Management shall include:
  - *(a) a summary of Ontario's land and forest base;*
  - *(b) forest products industry statistics and harvest volumes;*
  - *(c) area harvested and average and maximum size of clearcuts;*
  - *(d) volume losses due to natural forces categorised according to insects, disease, fire, blowdown, others;*

(e) government revenues from stumpage and area charges.
(f) Spending for maintenance and construction of primary, secondary and other roads; spending for regeneration, tending and protection by treatment method.
(g) Forecast and actual spending on tending and regeneration pursuant to Condition 38(a);
(h) a summary of management activities; and a summary of silvicultural effectiveness in the form of areas assessed for Free-to-Grow status, areas declared Free-to-Grow and condition survey results;
(i) a summary of the monitoring (compliance, effects and effectiveness) results, including a summary drawn from Annual Reports, prepared for each forest management unit in accordance with Appendix 18;
(j) results of negotiations with Aboriginal peoples pursuant to Condition 77 including statistics describing licences and resource allocation to Aboriginal peoples, on a district basis.
(k) a summary of major problems identified by independent audits as provided in Condition 86;
(l) a list of all Timber Management Plans currently in preparation and those which are expected to be initiated in that year including a tentative list of starting dates;
(m) kilometres of primary and secondary roads constructed, maintained, gated, signed or physically or naturally abandoned;
(n) incidents of washouts of water crossings on access roads in Areas of Concern as provided in Condition 52(d) and the status of criteria specified in Condition 52(e);
(o) merchantable and unmerchantable timber wastage by volume and species pursuant to condition 78(b)(ii); and
(p) progress reports on the following scientific research, technical development programs and policy development programs, which MNR has undertaken:
   - Condition 27 Clearcut size and configuration monitoring;
   - Condition 52(e) Water crossing removal criteria development;
   - Condition 94(b) Environmental Guidelines for Timber Management Activities;
   - Condition 94(c) Pine Marten and Pileated Woodpecker habitat Guidelines;
   - Condition 96 Silvicultural effectiveness monitoring initiatives;
   - Condition 97 Forest Ecosystem Classification Program;
   - Condition 98 Northern Ontario Wetlands Evaluation System;
   - Condition 99 ANSIs;
   - Condition 100 Growth and Yield Studies;
   - Condition 101 Full Tree Harvest / Long term Productivity;
   - Condition 102 Tending and Protection improvement Program;
   - Condition 103 Old Growth;
   - Condition 104 Socio Economic analysis;
   - Condition 106 Roadless Wilderness Areas Policy;
   - Condition 107 Landscape Management, Biodiversity, HSA;
   - Condition 108 Geographic Information Systems; and
   - Condition 110 District Land Use Guidelines

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Appendix 22: State Of The Forest Report

1. The State of the Forest Report shall include:
   (a) an update of the "Forest Resources of Ontario, 1986", including a summary of age class distribution by working group for each MNR Region;
   (b) a summary of the preceding five "Annual Reports on Timber Management", including a provincial overview and summary of silvicultural effectiveness drawn from data contained in the Annual Reports;
   (c) wood supply synopses and projections by management unit, Region and cover type, and a description of typical strategies used to address wood supply concerns;
   (d) a discussion of wood supply as related to the purpose of the undertaking;
   (e) an estimate of the change in forest growing stock during the five year term;
   (f) a description of progress on improvement of implementation manuals, advances in information

collection and management, and scientific research and technical development; and

(g) a description of relevant provincial-level problems and issues anticipated over the next five years, and a description of any programs or projects expected to be implemented or enhanced to address those problems and issues.

(h) the effectiveness of the timber management planning process in terms of
  - *(i) average and maximum elapsed time required to prepare and approve individual Timber Management Plans,*
  - *(ii) estimates of average preparation costs and actual time invested for individual Timber Management Plans.*
  - *(iii) a summary of minor and major amendments to approved Timber Management Plans since the last Report, including a record of input from Local Citizens Committees concerning the categorization of Plan amendments and*
  - *(iv) a complete record of all bump-up requests, and their disposition since the last Report.*

(i) the approved and updated Timber Production Policy pursuant to Condition 105(d);

(j) conclusions on the success of meeting non-timber management objectives for the forest management unit;

(k) forecast and actual spending on tending and regeneration pursuant to condition 38(a);

(l) summary of the major unresolved problems associated with visual resources as provided in Condition 24; and

(m) area harvested and average and maximum size of clearcuts.

Implementation Experience

MNR has met the requirement to carry out a comprehensive review of the undertaking in the eighth year of this EA Approval. This Timber Class EA Review summarizes the findings of that comprehensive review and makes recommendations regarding an extension and amendments to the EA Approval based on supporting information required by T&C 114.

MNR has met the requirements of T&C 111 by providing progress reports to the Ministry of Environment and Energy on various aspects of this EA Approval. These progress reports have been provided throughout the term of this EA Approval. In addition, MNR has provided regular reporting on specific terms and conditions and related ongoing developments in each provincial Annual Report on Forest Management.

To support this Timber Class EA Review, MNR has prepared separate progress reports on a variety of subject matters, identified in T&C 114 as supporting information. MNR has also prepared a number of additional progress reports on items of public interest, such as results of negotiations with Aboriginal peoples as required by T&C 77. These progress reports are found in Section 5.0 of this Timber Class EA Review.

MNR has produced five provincial Annual Reports on Forest Management for the fiscal years 1995/96 to 1999/00 in accordance with the requirements of T&C 82 and Appendix 20. Each of these has contained progress reporting on scientific research, technical and policy programs undertaken by MNR. These reports have been tabled in the Legislature and have been made available to the public.

In accordance with T&C 84 and Appendix 22, MNR has produced a State of the Forest Report covering five years. The report was tabled in the Legislature in early 2002 and was titled State of the Forest Report, 2001.

Analysis of Implementation Experience

MNR and many stakeholders have observed that there is considerable overlap in the content of reports describing the overall implementation of the EA Approval. MNR believes this reporting is necessary and should be public. However, MNR also believes these reports can be refocused to provide the public with information on ongoing forest management activities separate from periodic reporting on *Environmental Assessment Act* and EA Approval implementation and administration.

In Section 3.3.1, MNR has recommended maintaining a Provincial Annual Report on Forest Management, that includes reporting on forest management statistics and includes a description of significant advancements and milestones in scientific research, and in technical and policy developments related to forest management. This provides a regular progress reporting as envisaged by T&C 111.

In Section 3.3.2, MNR has recommended retaining a State of the Forest Report, which will be prepared consistent with the requirements of the *Crown Forest Sustainability Act.* That report will include a discussion of the overall status of the forest resource and will provide an examination of the management of Crown forests. The report will be prepared every five years, tabled in the Legislature, provided to the Ministry of Environment and Energy, and made available to the public.

Both the Provincial Annual Report on Forest Management and the State of the Forest Report, have broad public appeal to those interested in the management of Ontario's forests. They are written with the public audience in mind and provide information that the public has expressed interest in.

MNR has undertaken a review of the undertaking during the eighth year of this EA Approval and is submitting to the Minister of Environment and Energy this Timber Class EA Review. This review reports on a wide range of topics regarding the implementation of the EA Approval. MNR notes that a large amount of the information presented and relied upon during this review is also available in separate documents such as the State of the Forest Report, 2001.

MNR believes that ongoing monitoring and periodic reporting on the EA Approval is necessary, but can be improved upon in two ways. Firstly, reporting on EA matters every five years would be more appropriate than a longer time frame such as eight years, now that these matters have become part of MNR's day-to-day business. Periodic five-year reporting also ensures that regular updates are provided to the Ministry of Environment and Energy to support continuous improvement in light of MNR's recommendation for no fixed expiry date for this extended and amended EA Approval.

Secondly, MNR is recommending changes to the content of this new Five-Year EA Report by focusing it on matters pertaining to environmental assessment administration, specific to this EA Approval. This will include, for example, a discussion of the overall effectiveness of this EA Approval in meeting the purpose of the undertaking, and descriptions of environmental assessment administration matters such as amendments to the EA Approval. These matters are of interest to MNR and the Ministry of Environment and Energy but tend to have less appeal to the general public. The Five-Year EA Report will be provided to the Ministry of Environment and Energy and be made available to the public.

To realize these improvements, MNR recommends that the requirements of T&Cs 111 and 114 be amended to allow for a new Five-Year EA Report.

Recommended Term and Condition

MNR recommends that T&Cs 111 and 114 be deleted and replaced with the following:

52. (a) In the sixth year following the extension and amendment of this EA Approval, and every five years thereafter, MNR shall prepare a report (the "Five-Year EA Report") on the ongoing operation of this EA Approval. The report shall be provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following:

- **(i) a discussion of the overall effectiveness of this EA Approval in meeting the purpose of the undertaking, namely to provide a continuous and predictable supply of wood for Ontario's forest products industry;**
- **(ii) a summary of the most recent five-year report on the state of the Crown forests as required by the *Crown Forest Sustainability Act*, Section(22);**
- **(iii) a discussion of the environmental, social and economic benefits realized from implementing the undertaking;**
- **(iv) a description of the implementation of the forest management planning process including: the number of forest management plans and their associated cost and time to prepare and approve; contingency plans; plan amendments; disposition of requests for individual environmental assessments; and, a discussion of related public consultation;**
- **(v) a summary and discussion of contributions to and expenditures from the Forest Renewal Trust and the Forestry Futures Trust;**
- **(vi) identification of the upcoming forest management plan preparation schedule, and where to obtain the most current schedule;**
- **(vii) a discussion of significant initiatives related to the implementation of this EA Approval;**
- **(viii) a description of the number, type and disposition of amendments to this EA Approval;**
- **(ix) a description of where the public can obtain a current copy of the consolidated terms and conditions of this EA Approval, as amended;**
- **(x) a discussion of specific issues and problems related to implementation of this EA Approval and the manner in which they have been addressed to date; and**
- **(xi) a description of actions to be taken to improve the overall implementation this EA Approval.**

3.7.3 Amending Provisions for the EA Approval

Current Requirement

T&C 112 and Appendix 24 describe a procedure for making amendments to this EA Approval. This provision for amendment applied to planning, monitoring and an allowance for new technologies.

__T&C 112__

(a) *Amendments to the approval of the undertaking during the term of this approval may be required to enable:*
  - (i) *Clarification or improvement of the timber management planning process and Plan content requirements described in these terms and conditions;*
  - (ii) *Clarification or improvement of the provisions for monitoring described in these terms and conditions; or*
  - (iii) *Extension of the approved undertaking to include new technologies which may be regular operational practice in the future.*

(b) *In cases where an amendment to the approval for an undertaking is required, the procedure set out in Appendix 24 shall apply.*

__Appendix 24: Amendments To The Approval For The Undertaking__

1. *The following procedure shall apply in cases where an amendment to the approval for the undertaking is required:*
   - (a) *MNR will submit a request for an amendment to the Director of the Environmental Assessment Branch, Ministry of Environment and Energy. MNR shall describe the amendment being requested, shall provide the reasons for the request, and will provide any additional documentation which MNR considers appropriate or necessary to support its request, including a summary of the results of the formal public consultation concerning the request which has been undertaken.*
   - (b) *The Environmental Assessment Branch, Ministry of Environment and Energy will review the requested amendment and submit the results of that review to the Minister of Environment and Energy. If the Minister of Environment and Energy determines that the requested amendment is reasonable, the Minister shall give notice to all parties to this Environmental Assessment, and any municipality or government ministry or agency which is potentially affected, and to the general public. A period of 30 days shall be provided for public comment prior to a decision on approval of the requested amendment.*
   - (c) *The Minister of Environment and Energy may approve the requested amendment, reject the amendment, or refer the amendment to the Environmental Assessment Board for a decision. In each case, the Minister shall give notice to all persons who made submissions in response to the public notice referred to in Appendix 24, section 1(b), and to the general public.*

Implementation Experience

To date, MNR has not submitted any amendment requests to this EA Approval, although the opportunity to do so was enabled through T&C 112 and Appendix 24. MNR has considered changes to the approval, but has found the scope of T&C 112 to be limiting.

During the past eight years, major change has occurred in forest legislation, business relationships, and the science underlying forest management. In most cases, MNR found ways of addressing these changes within the scope of the current EA Approval. In other cases, proposed amendments to address these changes were set aside for incorporation into this Timber Class EA Review because they were believed to be beyond the scope of T&C 112.

Analysis of Implementation Experience

The current provisions for amendment to the EA Approval are restricted to clarification and improvements in the timber management planning process and plan content requirements; clarification and improvements to provisions for monitoring; and the inclusion of new technologies. To keep pace with changes in circumstances and new information beyond these three narrow areas, it will be necessary to allow for a broad scope of amendment provisions to include all aspects of the EA Approval.

MNR is therefore recommending amendment to T&C 112 and Appendix 24 in order to address all types of changing circumstances. MNR is proposing a more generic mechanism to allow consideration of future amendments to all aspects of the EA Approval. A broadly enabling amending mechanism is an important means of providing for continuous improvement of any environmental assessment approval.

T&C 112 and Appendix 24 were considered by some to limit amending opportunities to MNR alone. MNR is recommending changes to the amending provisions to allow for the Ministry of Environment and Energy and the public to also bring forward requests for amendment of the EA Approval. Public consultation is a key component of any amendment and will take place prior to the submission of a proposed amendment to the Ministry of Environment and Energy. The Minister of Environment and Energy, or delegate, would make all approval decisions on amendments.

In preparing this Timber Class EA Review, MNR has examined the amending provisions found in recent class environmental assessment approvals. MNR's recommended EA Approval amending procedures have been modelled after those found in the Class Environmental Assessment for Provincial Transportation Facilities, as amended in 2000 (MTO 2000).

Recommended Term and Condition

MNR recommends that T&C 112 and Appendix 24 be deleted and replaced with the following:

53. Amendments may be made to any term and condition of this EA Approval using the following process.

- **(a) Two types of amendments to the terms and conditions of this EA Approval will be considered:**
  - **(i) Minor amendments are those amendments that do not substantively change this EA Approval. For example, clarification of wording and streamlining of redundant processes would be considered minor amendments; and**
  - **(ii) Major amendments are those amendments that substantively change this EA Approval. For example, a proposal to make use of a new method for carrying out the undertaking, such as an operational fertilization program would be considered a major amendment.**

(b) Public consultation shall be undertaken on a preliminary amendment proposal and will be used to develop a proposed amendment. Both the preliminary amendment proposal and the subsequent proposed amendment shall, at a minimum, contain the following information:
- (i) a brief rationale for the amendment with particular reference to the new information or change in circumstances giving rise to the need for an amendment;
- (ii) a brief rationale for the categorization of the amendment as minor or major;
- (iii) a detailed discussion of any expected effects on the natural environment of proceeding with the amendment, including the science underlying the proposal;
- (iv) a detailed discussion of any social effects of proceeding with the amendment, including potential impacts on affected and interested persons;
- (v) a detailed discussion of any economic effects of proceeding with the amendment, including a discussion of costs;
- (vi) a discussion of how the amendment may be implemented including the timeframes and geographic application; and
- (vii) a discussion of the public consultation conducted to date on the proposed amendment.

(c) Amendments may be proposed by MNR, the Ministry of Environment and Energy or other persons in accordance with the appropriate amending process as set out in this term and condition.

(d) The following process shall be followed for minor amendments proposed by MNR:
- (i) MNR shall bring forward any proposal for a minor amendment to the attention of the Minister of Environment and Energy, or delegate.
- (ii) Within fifteen days of receiving MNR's proposal, the Minister of Environment and Energy, or delegate, may instruct MNR to consult further with the affected persons. Where further consultation is required, a thirty-day review period for responses will be provided.
- (iii) If no further consultation on the proposal is required, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days of notification of the proposed amendment. If consultation is required, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days after submission of the results of the consultation.
- (iv) Based on MNR's proposal and any comments received, the Minister of Environment and Energy, or delegate, may determine that there are no significant environmental concerns resulting from the proposal, and approve the amendment.

  If the Minister of Environment and Energy, or delegate, believes that there are significant environmental concerns which cannot be resolved through conditions of approval, or negotiation between MNR and the concerned person, the Minister of Environment and Energy, or delegate, may declare that the amendment can only be evaluated through the major amendment process.
- (v) If the amendment is approved, a notice of amendment shall be given to all persons who made submissions and a copy of the notice shall be placed in the public record maintained by the Ministry of Environment and Energy.

(e) The following process shall be followed for major amendments proposed by MNR:
- (i) MNR shall bring forward any proposal for a major amendment to the

attention of the Minister of Environment and Energy, or delegate.

(ii) Within thirty days of receiving MNR's proposal, the Minister of Environment and Energy, or delegate, may instruct MNR to conduct further public consultation including notification of the public and any affected persons. Where consultation is required, a minimum thirty-day consultation period will be provided.

(iii) If no consultation is required on the proposal, the Minister of Environment and Energy, or delegate, shall make a decision within sixty days of notification of the proposed amendment. If consultation is required on the proposal, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days after submission of the results of the consultation.

(iv) Based on MNR's proposal and any comments received on the proposal, the Minister of Environment and Energy, or delegate, may determine that there are no significant environmental concerns resulting from the proposal and approve the amendment.

If the Minister of Environment and Energy, or delegate, believes that there are significant environmental concerns which cannot be resolved through conditions of approval, or negotiation between MNR and the concerned person, the Minister of Environment and Energy, or delegate, may deny the request for the amendment as proposed.

(v) If the amendment is approved, a notice of amendment shall be given to all persons who made submissions and a copy of the notice shall be placed in the public record maintained by the Ministry of Environment and Energy.

(f) The following process shall be followed for minor and major amendments proposed by the Ministry of Environment and Energy:

(i) the Ministry of Environment and Energy may propose an amendment to this EA Approval;

(ii) if the Minister of Environment and Energy, or delegate, finds that an amendment may be necessary, the Minister of Environment and Energy, or delegate, shall notify MNR as soon as possible with respect to the proposed amendment. MNR shall be given a reasonable opportunity to comment;

(iii) after providing MNR with a reasonable opportunity to comment, the Ministry of Environment and Energy shall direct MNR to prepare and submit the amendment for approval;

(iv) based on MNR's submission, and after consultation with the Minister of Natural Resources, the Minister of Environment and Energy, or delegate may approve the amendment; and

(v) if the amendment is approved, a notice of amendment shall be placed in the public record maintained by the Ministry of Environment and Energy.

(g) The following process will be used for minor and major amendments proposed by persons other than the Ministry of Environment and Energy or MNR:

(i) MNR shall consider all requests for amendments of this EA Approval submitted by persons other than the Ministry of Environment and Energy and MNR;

(ii) a person that proposes an amendment to this EA Approval must first notify MNR. The notification shall be in writing and shall be in accordance with the requirements of part (b)(i) to (b)(vi) of this term and condition;

(iii) MNR shall notify the person within sixty days of receipt of an amendment request, with respect to whether:

- **MNR intends to proceed with the proposed amendment; or**
- **MNR will attempt to resolve the issue by means other than an amendment (e.g. protocol, memorandum); or**
- **MNR does not intend to proceed with the proposed amendment;**

(iv) **if MNR intends to proceed with the proposed amendment, MNR may bring the proposed amendment forward as a minor or major amendment in accordance with parts (d) or (e) of this term and condition;**

(v) **if MNR does not intend to proceed with the proposed amendment, or the issue is otherwise unresolved, MNR shall refer it to the Minister of Environment and Energy, or delegate, for consideration. The Minister of Environment and Energy, may concur with MNR and reject the proposal or pursue the concerned person's proposed amendment as a Ministry of Environment and Energy proposed amendment, in accordance with the process outlined in part (f) of this term and condition.**

3.7.4 Recorded Proceedings of the Timber Class EA Hearings

Current Requirement

T&C 115 required MNR to provide copies of the recorded proceedings of the EA hearings to Lakehead University and the University of Toronto. The Ministry of the Environment and MNR were required to maintain a copy of the recorded proceedings as well. The EA Board stated in the decision "The hearing record represents the cumulative knowledge, opinions and wisdom of the most expert and authoritative people who have devoted their careers and lives to the task of understanding and managing Ontario's forests" (Koven and Martel 1994, Page 20). The EA Board judged the record to be important for a number of reasons and wanted it to be available for students, academics, practitioners, the public and the responsible government agencies for reference and research purposes.

T&C 115

MNR shall provide copies of the recorded proceedings of the Timber Management Planning Class Environmental Assessment Hearing including transcripts, exhibits, final argument and where possible, interrogatories, to Lakehead University and the University of Toronto, for academic and research purposes. MNR shall also maintain a copy in its main office in Toronto. The Ministry of Environment and Energy shall maintain a copy in the Environmental Assessment Branch for public use and for its own use in monitoring compliance with this approval.

Implementation Experience

MNR has provided copies of the recorded proceedings of the EA hearings to Lakehead University and the University of Toronto. MNR has maintained a copy of the recorded proceedings in Toronto.

Analysis of Implementation Experience

MNR has provided copies of the recorded proceedings and maintained its own copy as required. MNR recognizes the importance of continuing to maintain the recorded proceedings from the EA hearings for reference.

MNR believes the recorded proceedings should be maintained in a location where they are readily accessible by MNR staff who are directly engaged in the provincial co-ordination of forest management planning and in the administration of this EA Approval. Since the early 1990's, MNR's main office branch responsible for these areas has been located in Sault Ste. Marie. The current responsibility resides with the Forest Management Branch of the Forests Division in Sault Ste. Marie.

MNR believes it is important for the Ministry of Environment and Energy to continue to maintain a copy of the recorded proceedings for public use and its own use.

MNR recommends that T&C 115 be updated.

Recommended Term and Condition

MNR recommends T&C 115 be deleted and replaced with the following:

54. MNR and the Ministry of Environment and Energy shall continue to maintain copies of the recorded proceedings of the 1988-1992 Timber Class Environmental Assessment Hearings including transcripts, exhibits, final argument and where possible, interrogatories. MNR shall continue to maintain a copy for its use in the appropriate main office location associated with the Forest Management Branch, or its successor. The Ministry of Environment and Energy shall continue to maintain a copy with the Environmental Assessment and Approvals Branch, or its successor, for public use and for its own use in monitoring compliance with this approval.

4.0 RECOMMENDED TERMS AND CONDITIONS

The terms and conditions found in this section have been copied from Section 3.0 of this document. The headings associated with these terms and conditions have been provided for ease of reference.

MNR recommends that all 115 original terms and conditions and 25 associated appendices of this EA Approval be deleted and replaced with the terms and conditions found throughout Section 3.0 and repeated in this Section as follows:

Forest Management Planning

Forest Management Plans - General

Plan Preparation and Renewal Schedule

1. (a) A Forest Management Plan shall be prepared for each management unit in accordance with the Forest Management Planning Manual. Each Forest Management Plan shall contain long-term management direction for the management unit, identification of ten years of harvest, renewal and maintenance areas, locations of primary and branch road corridors, and the details of operations for the initial five-year operational term. Details of operations for the second five-year operational term shall be prepared during the fifth year of the Forest Management Plan.

(b) Normally a Forest Management Plan shall be renewed every ten years. The Year Three Annual Report for the management unit shall describe progress in plan implementation. If the Year Three Annual Report supports continuation of the long-term management direction, the details of operations for the remaining five years shall be planned, reviewed and approved during the fifth year, and then added to the Forest Management Plan. If the Year Three Annual Report does not support the continuation of the long-term management direction, an appropriate contingency plan shall be prepared to bridge the time required to complete an unscheduled plan renewal.

(c) By January 31 of each year, MNR shall produce a list of all management units. This list shall identify all forest management plans currently in preparation, all forest management plans expected to be initiated in that year, and all management units where operational planning for the second five-year operational term is scheduled in that year. MNR shall provide the list to the Ministry of Environment and Energy, and shall make the list available to the public.

Plan Preparation by Plan Author, Planning Team and Local Citizens Committee

2. A Forest Management Plan shall be prepared for each management unit in an open and consultative fashion, by a Registered Professional Forester, who shall be the plan author.

(a) The plan author shall be assisted by an interdisciplinary planning team and a Local Citizens Committee, with opportunities for ongoing participation by

interested and affected persons and organizations, and by the general public.

(b) The planning team shall include an MNR Registered Professional Forester and, where possible, a person who collectively represents overlapping licensees and beneficiaries of MNR wood supply commitments who do not have ownership in the company holding the Sustainable Forest Licence on the management unit .

(c) An opportunity shall be provided for a representative from the Local Citizens Committee and a representative from each Aboriginal community in or adjacent to the management unit to participate on the planning team.

(d) The planning team shall be appointed by the MNR District Manager.

Plan Documentation

3. The following documentation, in accordance with the details described in the Forest Management Planning Manual, shall accompany each draft and approved forest management plan:
   (a) an index to the environmental assessment components of the plan;
   (b) supplementary documentation that summarizes the information that was used in the preparation of the plan, and provides supporting documentation for the decisions in the plan; and
   (c) a forest management plan summary in both written and mapped format.

Plan Certification, Review and Approval

4. The plan author shall certify that the draft and final Forest Management Plan has been prepared in accordance with the Forest Management Planning Manual.
   (a) MNR district and regional staff shall review the draft Forest Management Plan and produce a list of required alterations. Required alterations relating to the manipulation of the forest cover shall be certified by a Registered Professional Forester.
   (b) Upon satisfactory completion of the required alterations, the MNR District Manager shall certify that the plan has been prepared in accordance with the Forest Management Planning Manual, relevant policies and obligations (including any relevant MNR agreements with Aboriginal peoples), and MNR's current approved implementation manuals (guides) as described in the Forest Operations and Silviculture Manual.
   (c) The MNR District Manager's certification shall also identify all exceptions to the specific direction or recommendations in an implementation manual (guide).
   (d) The MNR District Manager shall recommend the plan for approval, and the MNR Regional Director shall make the decision on plan approval.

Public and Aboriginal Consultation

Local Citizens Committees

5. A Local Citizens Committee, comprised of local citizens representing a range and balance of interests, shall be established in accordance with the requirements of Section 13 of the *Crown Forest Sustainability Act*, for each MNR District or management unit.

(a) The Local Citizens Committee shall be a standing committee. Members shall be appointed by the MNR District Manager. Persons directly employed by the Sustainable Forest Licensee preparing the local forest management plan, are not eligible members unless no other person is nominated to represent their local interest group. The majority of appointments shall be drawn from nominations from local interest groups. The main interests represented on this committee should include:
  - (i) local business;
  - (ii) tourism industry;
  - (iii) anglers and hunters;
  - (iv) Aboriginal communities;
  - (v) forest industry;
  - (vi) naturalists;
  - (vii) municipalities;
  - (viii) trappers and other resource users;
  - (ix) other Crown Land recreationalists;
  - (x) forest industry trade unions;
  - (xi) woodsworkers;
  - (xii) small independent loggers;
  - (xiii) mineral sector;
  - (xiv) Chamber of Commerce member or Economic Development Officer;
  - (xv) other interest groups; and
  - (xvi) the general public.

(b) The purpose of the Local Citizens Committee is to participate as an integral part of the forest management planning process by:
  - (i) ensuring that all local interests are effectively communicated to all others involved in forest management planning;
  - (ii) increasing the effectiveness of the public consultation process, by participating in its implementation, and in the consideration of any additional formal public consultation opportunities that would be useful, in the context of local circumstances and needs;
  - (iii) participating in the development, identification and description of objectives, strategies, problems and issues.
  - (iv) participating in the development of the values map(s);
  - (v) promoting integration of all interests by participating in the evaluation of trade-offs to be made during the planning process and the resolution of problems, differences and conflicts as early as possible in the planning process;
  - (vi) assisting in monitoring the performance of Forest Management Plan implementation;
  - (vii) providing advice to the MNR District Manager when discretionary decisions must be made (e.g., the categorization of amendments, and responses to requests for individual environmental assessments); and
  - (viii) providing input into independent forest audits for the management unit.

(c) Local Citizens Committee shall provide input to the planning team and to insect pest management as follows:
  - (i) The Local Citizens Committee may nominate a representative of the Committee to serve as a member of the forest management planning team.
  - (ii) Other members of the Local Citizens Committee may attend planning team meetings as observers.
  - (iii) Joint meetings of the Local Citizens Committee and the planning team shall

be held at agreed upon stages of the planning process.

(iv) The planning team and representatives of the Local Citizens Committee shall attend public information centres.

(v) The member of the Local Citizens Committee who serves as the representative on the planning team shall be invited to serve on the multi-disciplinary team which produces the district insect pest management program.

(d) The Local Citizens Committee shall develop its own rules with respect to any procedural matters required to meet its responsibilities during forest management planning and plan implementation. These matters include such things as frequency of and attendance at meetings and Information Centres, and circulation of information among members of the Local Citizens Committee.

(e) Disbursements and Support

(i) Members of the Local Citizens Committee shall be reimbursed by MNR for reasonable out-of-pocket expenses in connection with their participation.

(ii) The Local Citizens Committee member serving on the planning team shall be provided a reasonable per diem fee for attendance at planning team meetings.

(iii) MNR shall provide the necessary office support, e.g., secretarial support and typing of report for supplementary documentation, for the affairs of the Committee to be conducted efficiently and effectively.

(iv) Each MNR District Manager shall provide to the Local Citizens Committee any available information reasonably required by the Committee. This information will be provided as it becomes available, in order to ensure achievement of the Local Citizens Committee purposes. Without limiting the generality of the foregoing, each Local Citizens Committee will be provided with the following materials for the relevant Management Unit, in summary form and at a time no later than the invitation to participate:

- background information;
- data describing non-timber resources; and
- data describing the timber resource.

(f) Reports and Records

(i) All documentation produced by the Local Citizens Committee shall be available for review by interested persons. In particular, the Local Citizens Committee shall prepare a report concerning their activities during Forest Management Plan preparation; the problems and issues addressed by them; and their assessment of the effectiveness of the Local Citizens Committee structure and recommendations for change, if any and an assessment of the co-operation provided to the Local Citizens Committee by MNR. This report shall be summarized by the Local Citizens Committee and provided as follows:

- in an early version for inclusion in the Preliminary Forest Management Plan Summary to be distributed at the First Information Centre;
- in final form for inclusion in the Draft Forest Management Plan Summary and revised, if necessary for the final Forest Management Plan;
- as part of the Forest Management Plan Summary; and
- the full report of the Local Citizens Committee shall form part of the supplementary documentation of the Forest Management Plan.

(ii) Forest Management Plans shall contain a brief statement on the first page reporting generally the Local Citizens Committee's agreement or disagreement with the Forest Management Plan and indicating that the Local Citizens Committee's report is available in the Supplementary Documentation to the Forest Management Plan.

(g) The Forest Management Planning Manual may provide additional guidance for Local Citizens Committees.

Public Consultation

6. (a) In the preparation of the Forest Management Plan for the ten-year period, formal public consultation opportunities shall be provided at five stages, as described in the Forest Management Planning Manual. General public media notices and direct written notices to interested and affected persons and organizations shall be issued at each stage of the public consultation process. The notice for each stage shall include:
   - (i) an explanation of the purpose of the stage of consultation, and its relationship to other stages;
   - (ii) identification of the forum (e.g., information centre) for consultation, where applicable;
   - (iii) a description of the information available;
   - (iv) a request for contributions to the background information base and comments on material available for review; and
   - (v) identification of MNR, forest company and Local Citizens Committee contacts.

(b) The information that shall be available at the appropriate MNR offices and forest company offices and/or public forums at each stage will build with successive stages of the public consultation process. The information shall include, where appropriate for the stage in the process, background information, results of analyses, preliminary and final text and maps, the draft Forest Management Plan and summary of the draft Forest Management Plan, and the approved Forest Management Plan and summary of the approved Forest Management Plan.

(c) MNR shall ensure that a written response is provided, in a responsive and timely way, to all written comments and submissions received from any person or group during the preparation of a Forest Management Plan. This requirement shall also apply to all verbal comments if a written response has been requested. In those responses, MNR shall ensure that an explanation of the results of the consideration of the comments and submissions is provided.

(d) In addition to the formal requirements of the public consultation process, members of the public shall be afforded the opportunity to consult directly with representatives from the planning team and Local Citizens Committee during the preparation of a Forest Management Plan.

(e) As part of the planning of operations for the second five-year operational term of the Forest Management Plan, formal public consultation opportunities shall be provided at three stages (i.e. review of proposed operations, review of planned operations and inspection of MNR-approved operations) as described in the Forest Management Planning Manual. Formal public consultation will be conducted in accordance with (a) to (d) of this condition, with appropriate modifications.

Aboriginal Consultation

7. The Forest Management Planning Manual shall describe provisions for Aboriginal consultation in the development of a forest management plan, including the following:

(a) Prior to the commencement of formal public consultation in the preparation of a Forest Management Plan, planning team representatives shall make reasonable efforts to meet with individual Aboriginal communities in or adjacent to the management unit to develop an appropriate approach for Aboriginal consultation. The approach shall be used for both the preparation of the Forest Management Plan for the ten-year period, and planning of operations for the second five-year operational term.

(b) The requirements of the immediately preceding term and condition regarding public consultation (i.e., requirements for public notice, consultation forums, information availability, written responses to comments and submissions, and direct consultation with affected and interested parties) shall apply to Aboriginal consultation. In addition, a Report on the Protection of Identified Aboriginal Values shall be part of the information available at the appropriate stages for Aboriginal consultation.

(c) The requirements of (a) and (b) of this term and condition also apply to the preparation of contingency plans, minor and major amendments to Forest Management Plans and contingency plans, and insect pest management programs, with whatever modifications are necessary in the circumstances.

(d) In the event that an appropriate approach regarding Aboriginal consultation is unable to be reached by the time formal public consultation is scheduled to begin, the requirements of the immediately preceding term and condition regarding public consultation shall be applied.

Issue Resolution and Bump-Up

8. The Forest Management Planning Manual shall describe provisions for a process to resolve issues and to address requests for an individual environmental assessment of specific proposed forest management activities in the plan, as follows:

(a) If a person has an issue during the preparation of a Forest Management Plan, an issue resolution process, as described in the Forest Management Planning Manual, shall be followed. That process shall require written submissions from the concerned person, including a description of the issue and a proposed solution. Opportunities shall be provided for the involvement of the Local Citizens Committee, and there shall be a requirement for a written decision from the plan author or the MNR District Manager or the MNR Regional Director. That process shall provide for the necessary interaction among the person requesting the issue resolution, the plan author, the MNR District Manager and the MNR Regional Director and shall be responsive to the schedule for the preparation, review and approval of a Forest Management Plan.

(b) During the preparation and review of the forest management plan for the ten-year period, any request for issue resolution shall be dealt with through progressive steps as follows:

(i) For any requests received prior to the draft plan being available for public review, the issue resolution process shall begin with the plan author.

(ii) For any requests received during the public review of the draft plan, the

issue resolution process shall begin with the MNR District Manager.

(iii) For any requests received after the completion of the public review of the draft plan, the issue resolution process shall begin with the MNR Regional Director.

(iv) The last date to request the issue resolution process shall be 30 days following the completion of the public review of the draft plan.

(c) During the planning of operations for the second five-year operational term, the following applies:

(i) For any requests received prior to the planned operations being available to the public, the issue resolution process shall begin with the plan author.

(ii) For any requests received during the public review of the planned operations, the issue resolution process shall begin with the MNR District Manager.

(iii) For any requests received after the completion of the 30-day public review of planned operations, the issue resolution process shall begin with the MNR Regional Director.

(iv) The last date to request the issue resolution process shall be 30 days after the completion of the public review of the planned operations.

(d) The requirements of the issue resolution process shall also apply to contingency plans, minor or major amendments to Forest Management Plans and contingency plans, and insect pest management programs, with whatever modifications are necessary.

(e) Commencing with the public inspection of an MNR-approved Forest Management Plan for the ten-year period, and the public inspection of the MNR-approved operations for the second five-year operational term, there shall be a 30-day period for any person to make a written request to the Minister of Environment and Energy, to order an individual environmental assessment of specific proposed forest management activities in the plan. The Minister of Environment and Energy shall notify the MNR District Manager and MNR Regional Director of the request, and MNR shall normally have 15 days to respond to the Minister of Environment and Energy on the request. The Minister of Environment and Energy shall normally decide on the request within 45 days of MNR's response to the Minister of Environment and Energy. If this deadline cannot be met, the Minister of Environment and Energy shall provide the reason for the delay and the expected timeframe for a decision, to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the plan author and the person requesting an individual environmental assessment.

(f) The opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific proposed forest management activities shall also apply to major amendments to Forest Management Plans and insect pest management programs, with appropriate modifications as necessary. The Minister of Environment and Energy shall notify the MNR District Manager and MNR Regional Director of the request, and MNR shall normally have 15 days to respond to the Minister of Environment and Energy on the request. The Minister of Environment and Energy shall normally decide on the request within 30 days of MNR's response to the Minister of Environment and Energy. If this deadline cannot be met, the Minister of Environment and Energy shall provide the reason for the delay and the expected timeframe for a decision to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the plan author and the person requesting an individual environmental assessment.

(g) Where there remains an outstanding individual environmental assessment

request to the Minister of Environment and Energy at the time that activities are scheduled for implementation, partial or conditional approval of activities may be granted by the MNR Regional Director, upon notice to the individual environmental assessment requestor and with the concurrence of the Director of the Environmental Assessment and Approvals Branch, Ministry of Environment and Energy, to permit appropriate operations to proceed in respect of activities and areas unaffected by the outstanding request.

(h) If the Minister of Environment and Energy agrees to the request for an individual environmental assessment, the Minister of Environment and Energy shall give written notice to the Minister of Natural Resources, the MNR District Manager and MNR Regional Director, the person requesting the individual environmental assessment, and the plan author, that MNR will be required to prepare and submit an individual environmental assessment for review and approval under the *Environmental Assessment Act.* The specific proposed forest management activities and the areas of the management unit that are affected by the individual environmental assessment request shall be identified. In such circumstances, partial or conditional approval of activities may be granted by the MNR Regional Director, in respect of activities and areas unaffected by the individual environmental assessment request, with the concurrence of the Director of the Environmental Assessment and Approvals Branch, Ministry of Environment and Energy.

Background Information and Management Unit Description

Background Information

9. The following background information shall be available for use in forest management planning, in accordance with the Forest Management Planning Manual:

(a) updated forest resource inventory data for the management unit in accordance with the requirements of the Forest Information Manual;

(b) fisheries and wildlife inventory information for the management unit; and,

(c) the most recent Management Unit Annual Reports for the management unit available at the time of planning.

Management Unit Description

10. Each Forest Management Plan shall contain a description of the management unit. The management unit description will be prepared in accordance with the Forest Management Planning Manual and shall contain:

(a) a description of the forest, based on updated forest resource inventory data and landscape level information;

(b) a description of fish and wildlife resources based on fish and wildlife inventory and habitat information;

(c) a relevant social and economic description;

(d) an Aboriginal Background Information Report which includes:

- **(i) a summary of the use of natural resources on the management unit by Aboriginal communities, in particular hunting, fishing, trapping and gathering;**
- **(ii) forest management related problems and issues for those communities; and**

(iii) an Aboriginal values map which identifies the location of natural resource features, land uses and values which are used by or of importance to those Aboriginal communities; and

(e) a values map identifying the locations of natural resource features, land uses and values.

(f) A values map is a representation in summary form of the geographical location of the known natural resource features, land uses and values which must be considered in forest management planning, and about which further inventory information is available. The types of information portrayed on the values map (or maps) will normally include, but are not limited to, the following, where such values have been identified by MNR, the forest industry or by any other group or person and are verifiable:

Natural Resource Features such as:	
Fisheries	
• major fish communities by lake/stream • bait fish lakes • spawning areas	• nursery areas • migration areas • headwater lakes and streams • food supply areas
Wildlife	
• moose concentration areas (early & late winter) • moose aquatic feeding areas • mineral licks • calving sites • deer wintering areas (yards) • raptor nests (e.g., eagles, ospreys, red-shouldered hawks, Cooper's hawks)	• heronries • waterfowl nesting areas • important habitats of vulnerable, threatened and endangered species* • caribou migration routes • caribou calving/high summer use areas • caribou wintering areas
Forests	
• tree improvement areas* • seed orchards* • seed collection areas	• genetic test areas* • research plots (e.g., growth and yield plots)*
Forest Resources Uses/Values such as:	
Tourism Establishments	
• main base lodges • outpost camps	• commercial boat caches • potential tourism areas
Cottaging/Residential Sites or Areas	
• existing development • remote cottage sites	• proposed development (from lakeshore management plans)
Mineral/Aggregate/Quarry Developments	
• pit or quarry permits or licences	• active mining claims
Commercial Fur	
• registered trapline areas	• trapper cabins
Crown Land Recreation	
• access points • canoe routes • portage trails • hiking/nature trails	• snowmobile trails • cross-country ski trails • approved boat caches • land use permit hunt camps
Bear Management Areas	
Wild Rice Production Areas	

Existing and Planned Infrastructure Features such as:	
• roads and railways • utilities (pipelines, hydro lines) • waste and sewage disposal sites • airports/airstrips • communications towers	• logging camps • mills • potable water supply sources, including sites on lakes, rivers and streams identified by any person as being used for water supplies
Cultural Heritage Sites *, such as:	
• cultural landscapes • structural remains	• archaeological remains • traditional use sites
Other Special Land Uses of Local Significance as identified by any person, such as:	
• areas of significance to local communities such as areas used for traditional or recreational activities • Reserves and other Aboriginal communities • Areas which have been identified as being required as reserve lands or for economic or capital development projects • Areas of Natural and Scientific Interest • Evaluated wetlands and evaluated wetland complexes	• registered trapline areas • areas used for fuelwood or building materials • sites of local archaeological, historical, religious and cultural heritage significance, including Aboriginal graveyards, spirit sites and burial sites * • medicinal plants • Significant ecological area (e.g. significant woodland, significant flora)
Exclusions from the Land Base of the Management Unit, including:	
• Federal lands (e.g., Indian Reserves, Department of National Defence Bases, National Parks) • Provincial parks, conservation reserves and approved provincial park candidates • Crown land leases (e.g., land use permits, licenses of occupation)	• patented lands • cemeteries/burial grounds, including Aboriginal cemeteries and burial grounds* • Areas of Natural and Scientific Interest which have been designated as exclusions from the management unit

*** Publicizing the location of certain values may be detrimental to conservation, in which case information would not normally be shown on the values map(s).**

Planning Long-term Management Direction

11. The long-term management direction for the management unit shall be established in a Forest Management Plan in accordance with the Forest Management Planning Manual. In the development of long-term management direction:

- **(a) management objectives shall be identified in accordance with the requirements of the Forest Management Planning Manual;**
- **(b) analytical methodologies, models and tools, regarding forest regulation, social and economic analysis, wildlife habitat supply and landscape management, shall be used; and**
- **(c) the level of forest harvest shall be established for the ten-year period of the Forest Management Plan, using forest regulation methodologies that determine the Available Harvest Area for every forest unit on the management unit.**

Access Planning

Primary and Branch Road Corridors

12. The Forest Management Planning Manual shall describe corridor planning provisions for new primary roads (i.e., any road that provides the principal access for the management unit) and new branch roads (i.e., any road that branches off an existing or new primary or branch road, including those roads that provide access to separate

areas of operations) including the following:

(a) In the preparation of the Forest Management Plan for the ten-year period, a 1 kilometre wide corridor and an associated use management strategy shall be identified for each new primary and branch road.

(b) For each new primary road, a 1 kilometre wide corridor shall be identified for a 20-year period, following the consideration and environmental analysis of a reasonable range of practical alternative corridors. Documentation of the consideration and environmental analysis of alternative road corridors, and the rationale for the selected corridor and associated use management strategy for each new primary road, shall be provided in the supplementary documentation that accompanies the Forest Management Plan. The new primary roads that will be constructed during the ten-year period of the Forest Management Plan will be identified.

(c) For each new branch road, a 1 kilometre wide corridor shall be identified for a ten-year period, following the consideration of natural resource features, land uses and values, as identified on the values map for the management unit, and the results of consultation with affected and interested parties. Documentation of the rationale for the corridor and associated use management strategy for each new branch road shall be provided in the supplementary documentation that accompanies the Forest Management Plan.

Area of Concern Crossings - Primary and Branch Roads

13. The Forest Management Planning Manual shall describe planning provisions for Area of Concern crossings within primary and branch road corridors, including the following:

(a) In the planning of operations for each five-year operational term, a 100 metre wide location shall be identified for each crossing of an Area of Concern within the 1 kilometre wide corridor for each new primary and branch road to be constructed. The determination of each Area of Concern crossing location shall involve consideration of natural resource features, land uses and values, as identified on the values map for the management unit, and the results of consultation with affected and interested parties.

(b) For each new primary and branch road water crossing to be constructed during the term of an Annual Work Schedule, the following information shall be provided in the Annual Work Schedule:

- **(i) a map that shows the 100 metre wide location of the water crossing within the 1 kilometre wide corridor,**
- **(ii) the results of a review of the water crossing as required under the federal Fisheries Act,**
- **(iii) a description of the proposed crossing structure,**
- **(iv) any conditions on the construction of the crossing, and**
- **(v) a recommendation on the future removal of the crossing structure, if the road is planned to be abandoned.**

(c) To allow for adequate review, the proposed location, structure and conditions on construction for each water crossing shall normally be identified in an Annual Work Schedule preceding the Annual Work Schedule for the year in which construction is scheduled.

(d) As part of the Annual Work Schedule approval, MNR shall approve each primary and branch road water crossing based on the information provided in accordance

with part (b) of this term and condition.

Operational Roads

14. The Forest Management Planning Manual shall describe planning provisions for operational roads (i.e., roads within an area of operations) including the following:

(a) In the planning of operations for each five-year operational term, any necessary conditions and/or restrictions on the locations and/or construction of operational road crossings of Areas of Concern shall be identified and documented. In addition, for each area of operations, a use management strategy for all operational roads within the area of operations shall be documented.

(b) For each operational road water crossing to be constructed during the term of an Annual Work Schedule, the following information shall be provided in the Annual Work Schedule:

- **(i) a map that shows the 100 metre wide location of the water crossing,**
- **(ii) the results of a review of the water crossing, as required under the federal Fisheries Act,**
- **(iii) a description of the proposed crossing structure,**
- **(iv) any conditions on the construction of the crossing, and**
- **(v) a recommendation on the future removal of the crossing structure, if the road is planned to be abandoned.**

(c) To allow for adequate review, the proposed location, structure and conditions on construction for each water crossing shall normally be identified in an Annual Work Schedule preceding the Annual Work Schedule for the year in which construction is scheduled.

(d) As part of the Annual Work Schedule approval, MNR shall approve each operational road water crossing, based on the information provided in accordance with part (b) of this term and condition.

Planning Harvest, Renewal and Maintenance Operations

Identification of Areas of Operations and Forecasts of Level of Activity

15. The Forest Management Planning Manual shall describe planning provisions for the identification of areas of operations, including the following:

(a) Consistent with the long-term management direction for the management unit, criteria shall be developed to be used in the identification of areas that could reasonably be harvested during the ten-year period. The criteria shall be documented in a Forest Management Plan, and shall include considerations such as: industrial wood requirements and wood supply commitments, wildlife habitat requirements, emulation of natural disturbance patterns, operability factors, age class, visual aesthetics, and opportunities for harvesting fuelwood. All areas that meet the criteria shall be eligible for harvest, and shall be identified and mapped as optional harvest areas.

(b) Preferred areas for harvest for the ten-year period shall be identified and mapped up to the level of the available harvest area for each forest unit and portrayed for each five-year operational term. All other optional harvest areas may be ranked in order of preference.

(c) Harvest areas shall be selected and mapped for each of the two five-year

operational terms based on public consultation on the preferred and optional harvest areas. Any areas within the areas selected for harvest, which are in excess of the projected industrial wood requirements and wood supply commitments for the management unit, shall be clearly identified and mapped as 'surplus areas'. The area selected for harvest, including the surplus areas, shall normally be equally balanced between the two five-year operational terms, and shall not exceed the available harvest area for each forest unit.

(d) For clearcut harvest operations, areas shall be selected for harvest in accordance with the most current direction and standards in MNR's approved implementation manual(s) or guide(s) relating to the emulation of natural disturbance patterns, as described in the Forest Operations and Silviculture Manual. Currently that direction provides for a range of sizes of clearcuts, which generally shall not exceed 260 hectares. Where clearcuts exceed 260 hectares, each such clearcut shall be recorded in the Forest Management Plan with the accompanying rationale.

(e) Areas for renewal and tending operations shall be identified and mapped for each of the two five-year operational terms. Those areas shall include: all of the areas selected for harvest; areas previously harvested during the term of the current or previous Forest Management Plan(s) and not yet renewed; areas of natural disturbances which require renewal; and areas which require tending.

(f) A contingency area for harvest operations, available for the ten-year period, shall also be identified and mapped separately. Contingency area shall be selected from the optional harvest areas, and include a minimum of one year, and a maximum of two years, of harvest operations. The contingency area shall serve as replacement area for harvest during the ten-year period of the Forest Management Plan, in the event that circumstances arise causing the areas selected for operations to be no longer available. The full requirements of the applicable planning terms and conditions of this approval shall apply to the planning of access roads, harvest, renewal and tending operations, for the contingency area.

(g) Each Forest Management Plan shall contain a forecast of the level of activity (e.g., harvest, renewal and tending), based on the areas selected for operations for each five-year operational term. The forecast for renewal and tending shall include an estimate of the associated expenditures.

Silvicultural Ground Rules

16. The Forest Management Planning Manual shall describe planning provisions for the development of Silvicultural Ground Rules, including the following:

(a) The Forest Management Plan shall contain Silvicultural Ground Rules for all of the forest unit-ecosite combinations on the management unit. The Silvicultural Ground Rules shall serve as the prescriptions for the areas of operations for the ten-year period of the Forest Management Plan. The Silvicultural Ground Rules shall be prepared and certified by a Registered Professional Forester, under the direction of the plan author, using the silvicultural guides which are described in the Forest Operations and Silviculture Manual.

(b) For each Silvicultural Ground Rule, the preferred silvicultural treatment package that is most commonly used on the management unit shall be identified, as well as acceptable alternative silvicultural treatments for each of the harvest, renewal and tending activities.

(i) If a Silvicultural Ground Rule includes a treatment which is not

recommended in the applicable silvicultural guide, that treatment shall be recorded as an 'exception'. The rationale for that 'exception' shall be provided, and the monitoring program for the Forest Management Plan shall describe the methods that will be used to determine the effectiveness of that 'exception' silvicultural treatment.

(ii) On the maps of areas selected for operations for each of the five-year operational terms of a Forest Management Plan, the areas selected for operations shall be cross-referenced to the Silvicultural Ground Rules.

(iii) At the time of implementation of operations, in the event that the actual site conditions encountered are found to be different than those previously identified in the Forest Management Plan, then other relevant approved alternative silvicultural treatments in the Silvicultural Ground Rules can be selected.

Silvicultural Treatments of Special Public Interest

17. The Forest Management Planning Manual shall describe planning provisions for silvicultural treatments of special public interest, including the following:

(a) In the planning of operations for each five-year operational term, locations where the following silvicultural treatments of special public interest are likely to occur shall be portrayed on the maps of the areas selected for operations:

(i) candidate prescribed burns;

(ii) areas proposed for aerial application of herbicides;

(iii) if applicable, areas which have been identified as eligible for insect pest management, and areas proposed for aerial application of insecticides, as a result of the application of the planning procedure for insect pest management programs; and

(iv) areas available for fuelwood.

(b) This information shall represent the best estimate of proposed operations at the time of operational planning, and shall not limit the selection of any other approved alternative silvicultural treatments in the Silvicultural Ground Rules at the time of implementation of operations.

Area of Concern Prescriptions

18. The Forest Management Planning Manual shall describe planning provisions for the development of operational prescriptions for Areas of Concern, including the following:

(a) Areas of Concern are areas that contain natural resource features, land uses and values that may be affected by forest management operations. These natural resource features, land uses and values are identified on the values maps for the management unit, and include all lakes and streams that appear on the maps of the areas selected for operations.

(b) In the planning of operations for each five-year operational term, operational prescriptions for Areas of Concern shall be prepared and documented in a table and clearly portrayed on the maps of areas selected for operations.

(c) Operational prescriptions for Areas of Concern shall be prepared for individual Areas of Concern, or groups of Areas of Concern with common natural resource features, land uses or values, using the applicable implementation manuals

(guides) which are described in the Forest Operations and Silviculture Manual. Operational prescriptions for Areas of Concern may include reserves (i.e., prohibition of operations), modified operations (i.e., specific conditions or restrictions on operations) or regular operations (i.e., in accordance with the Silvicultural Ground Rules), individually or in combination.

(d) For operational prescriptions for individual Areas of Concern, or groups of Areas of Concern with common natural resource features, land uses or values, which apply the specific direction or recommendations in an implementation manual (guide), documentation of the applicable section of the implementation manual (guide) shall be provided in the Forest Management Plan.

(e) If an operational prescription for an individual Area of Concern, or a group of Areas of Concern with common natural resource features, land uses or values, must be developed in the absence of specific direction or recommendations in an implementation manual (guide), there shall be a consideration and an environmental analysis of alternative prescriptions, and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. Any objections to such a prescription by affected and interested parties shall also be documented.

(f) Results of other planning exercises which involve proposed operational prescriptions that directly relate to forest management activities shall be made available for public review during the appropriate stages of public consultation. If the public review does not support the proposed operational prescription, the requirements of part (e) of this term and condition shall apply. If the public review supports the proposed operational prescription, no further planning shall be required and the rationale for that prescription, including the consideration of the comments received from affected and interested parties, shall be documented in the Forest Management Plan.

(g) For Areas of Concern which involve tourism or recreation values, there shall be consideration of visual aesthetics, which may include the use of viewscape analysis techniques, in the development of the prescriptions. There shall be a consideration and an environmental analysis of alternative prescriptions, and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. Any objections to such a prescription by affected and interested parties shall also be documented.

(h) If an operational prescription is developed for an individual Area of Concern, or a group of Areas of Concern with common natural resource features, land uses or values, that differs from the specific direction or recommendations in an implementation manual (guide), there shall be consideration and environmental analysis of alternative prescriptions and participation of affected and interested parties. Documentation of the consideration and environmental analysis of alternative prescriptions, the participation of affected and interested parties, and the rationale for the selected prescription, shall be provided in the supplementary documentation which accompanies a Forest Management Plan. The operational prescription shall be recorded in the Area of Concern prescriptions table as an 'exception', and the monitoring program for the Forest Management Plan shall

describe the methods which will be used to monitor the effectiveness of that 'exception' prescription.

Report on Protection of Identified Aboriginal Values

19. The Forest Management Planning Manual shall describe provisions for a Report on Protection of Identified Aboriginal Values applicable to Aboriginal communities in or adjacent to the management unit during the planning of operations for each five-year operational term, including the following:

(a) The planning team shall produce a preliminary Report on Protection of Identified Aboriginal Values that shall include:

- **(i) a summary of proposed operations and a discussion of proposed road corridors of interest to the Aboriginal community;**
- **(ii) the most current version of the values map and the Aboriginal values map;**
- **(iii) a discussion of prescriptions for specific Areas of Concern associated with identified Aboriginal values; and**
- **(iv) a discussion of how local Aboriginal hunting, fishing, trapping and gathering activities have been addressed in the planning of forest management operations.**

(b) The planning team shall produce a final Report on Protection of Identified Aboriginal Values that shall include:

- **(i) a summary of the draft Forest Management Plan;**
- **(ii) the updated version of the values map and the updated Aboriginal values map;**
- **(iii) a discussion of selected road corridors of interest to the Aboriginal community;**
- **(iv) a discussion of the updated prescriptions for specific Areas of Concern associated with identified Aboriginal values; and**
- **(v) an updated discussion of how local Aboriginal hunting, fishing, trapping and gathering activities have been addressed in the planning of forest management operations.**

Improving Silvicultural Planning

20. The Forest Management Planning Manual shall describe planning provisions for silvicultural planning, including the following:

(a) In the preparation of a Forest Management Plan, an analysis shall be undertaken by a Registered Professional Forester to determine the necessary levels of renewal and tending activities, and associated expenditures required to achieve objectives described in the Forest Management Plan. During the planning of operations for the second five-year operational term that analysis shall be updated. The analysis shall be documented and shall include a discussion of the following:

- **(i) the level of previous renewal and tending operations,**
- **(ii) the silvicultural effectiveness of previous renewal and tending operations,**
- **(iii) the expenditures associated with previous renewal and tending operations, and**
- **(iv) recommended changes that may affect the future level, effectiveness, and expenditures associated with the forecasted renewal and tending operations.**

Monitoring Program

21. The Forest Management Planning Manual shall describe planning provisions for monitoring operations, including the following:

(a) During the planning of operations for each five-year operational term provisions for monitoring operations shall be prepared and documented, and shall include:

- **(i) a general description of the forest operations inspection program for the management unit and specific provisions for monitoring operations in individual Areas of Concern and groups of Areas of Concern with common values;**
- **(ii) a description of monitoring which shall be used to determine the effectiveness of any silvicultural treatments which are 'exceptions' to the recommendations in the silvicultural guides;**
- **(iii) a description of monitoring which shall be used to determine the effectiveness of prescriptions for Areas of Concern which are 'exceptions' to the specific direction or recommendations in the applicable implementation manuals (guides); and**
- **(iv) a description of the program for carrying out assessments of regeneration success for both naturally and artificially regenerated areas, including assessments that are used in the Great Lakes-St. Lawrence forest region.**

(b) Monitoring descriptions shall include:

- **(i) the identification of the methods which shall be used;**
- **(ii) the timing and duration of monitoring;**
- **(iii) the documentation and reporting of monitoring results; and**
- **(iv) the opportunities for Local Citizens Committee members to participate in monitoring.**

Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs

Amendments to Forest Management Plans

22. The Forest Management Planning Manual shall describe planning provisions for amendments, including the following:

(a) An amendment shall be prepared when a change to an approved Forest Management Plan or an approved Contingency Plan is required. Any person can initiate the planning process for an amendment, by submitting a written request to the MNR District Manager. The request shall provide a brief description of the need for, and nature of, the proposed amendment. The MNR District Manager, in consultation with the Local Citizens Committee, shall decide if the proposed amendment should proceed, and the appropriate categorization of the amendment as administrative, minor or major. The MNR District Manager's decision shall consider, at a minimum, the following factors: the amount of planning and public consultation required for the proposed amendment, legitimate time constraints, the frequency of similar requests, and the adequacy of relevant information available at the time of the request.

(b) All applicable planning and documentation requirements for a Forest Management Plan shall apply to the preparation of an amendment to a Forest Management Plan or a Contingency Plan. All amendments shall be certified by the plan author and the MNR District Manager, and after approval, shall be filed in the same locations

as the approved Forest Management Plan. Public consultation provisions shall apply to major and minor amendments. The requirements for public consultation, including the contents of notices, the recipients of notices, and information availability, shall be similar to the requirements for a Forest Management Plan, with whatever modifications are necessary in the circumstances.

(c) Major amendments shall be prepared with the participation of affected and interested parties, and there shall be a formal public consultation opportunity during the development of the proposed operations. Major amendments shall be reviewed by MNR district and regional staff, and approved by the MNR Regional Director. There shall also be a public inspection of the MNR-approved amendment, with an opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific forest management operations proposed in the major amendment.

(d) Minor amendments shall be prepared in consultation with affected and interested parties, and reviewed by MNR district staff. Minor amendments shall be approved by the MNR District Manager, and there shall be a public inspection of the MNR-approved amendment.

(e) Administrative amendments shall be reviewed by MNR district staff, and approved by the MNR District Manager.

(f) Amendments to contingency plans must be consistent with the contingency plan proposal endorsed by the Ministry of Environment and Energy. Where an amendment request is not consistent with the endorsed contingency plan proposal, a new endorsement by the Ministry of Environment and Energy must be obtained.

(g) The Forest Management Planning Manual shall address amendment requirements to provide for the expeditious planning and implementation of salvage operations.

Contingency Plans

23. The Forest Management Planning Manual shall describe planning provisions for the development of a Contingency Plan, including the following:

(a) A Contingency Plan shall be prepared when special circumstances affect the implementation of a Forest Management Plan. These circumstances may include the following:

- (i) delays in preparation and approval of a Forest Management Plan,
- (ii) adjustments to forest management planning schedules associated with the amalgamation of management units,
- (iii) adjustments to forest management planning schedules to improve the timing of forest management planning across the province, and
- (iv) appropriate time to allow for unscheduled plan renewals.

(b) To initiate the planning process for a Contingency Plan, a proposal shall be submitted by the MNR Regional Director to the Director, Environmental Assessment and Approvals Branch, Ministry of Environment and Energy for endorsement. The proposal shall describe the need for, the term of, and the content of the Contingency Plan, public consultation to date, and provisions for additional public consultation in its preparation. The public consultation provisions shall be similar to the requirements for a Forest Management Plan, and may vary depending on the amount of public consultation to date of the proposed operations.

(c) Upon Ministry of Environment and Energy endorsement of the proposal,

preparation of the Contingency Plan shall proceed. As in the case of a Forest Management Plan, a Contingency Plan shall be prepared by a Registered Professional Forester, who shall be the plan author, assisted by a planning team and a Local Citizens Committee. The Contingency Plan shall be certified by the plan author, and reviewed by MNR district and regional staff. Upon satisfactory completion of changes in response to the MNR review, the Contingency Plan shall be certified and recommended for approval by the MNR District Manager in accordance with the same requirements as for a Forest Management Plan, approved by the MNR Regional Director, and filed in the same locations as the approved Forest Management Plan.

Insect Pest Management Programs

24. The Forest Management Planning Manual shall describe planning provisions for insect pest management programs, including the following:

(a) When there is a major insect pest infestation, a District insect pest management program shall be developed by a multi-disciplinary team, comprised of MNR district and regional staff and a representative(s) of the Local Citizens Committee(s). Areas eligible for insect pest management shall be identified, and a range of management options shall be considered and documented. The following management options shall be considered:

- **(i) no treatment;**
- **(ii) accelerated harvest,**
- **(iii) redirected harvest,**
- **(iv) salvage harvest,**
- **(v) the use of insecticides, and**
- **(vi) appropriate combinations of the foregoing options.**

(b) If the selected course of action is accelerated, redirected or salvage harvest operations, the MNR District Manager shall determine if an amendment to an approved Forest Management Plan(s) is required, and if so, the provisions for Forest Management Plan amendments shall apply.

(c) If the selected course of action involves the aerial application of insecticides, public consultation provisions shall apply. The requirements for public consultation, including the contents of notices, the recipients of notices, and information availability, shall be similar to the requirements for a Forest Management Plan, with whatever modifications are necessary in the circumstances.

(d) There shall be a formal public consultation opportunity during the development of the proposed insect pest management program and specific project proposals. The insect pest management program and specific projects that involve the aerial application of insecticides shall be approved by the MNR Regional Director. There shall also be a public inspection of the approved insect pest management program and specific projects that involve the aerial application of insecticides. There shall be an opportunity to request the Minister of Environment and Energy to order an individual environmental assessment of specific forest management activities in the approved insect pest management program.

(e) When considering the use of insecticides, where alternatives to chemical insecticides are commercially available, reasonably cost-effective, and approved federally and provincially for use, MNR will give preference to such alternatives.

Annual Operations

25. The Forest Management Planning Manual shall describe planning provisions for the preparation of an Annual Work Schedule, including the following:
    (a) An Annual Work Schedule shall be prepared and approved for each management unit before any operations may proceed. The Annual Work Schedule shall be prepared in accordance with the Forest Management Planning Manual
    (b) All areas scheduled for access, harvest, renewal and maintenance operations during the year shall be clearly mapped in the Annual Work Schedule.
    (c) In approving the Annual Work Schedule, MNR shall approve all water crossings to be constructed during the term of the Annual Work Schedule, based on the information provided in accordance with access planning requirements of this EA Approval (Terms and Conditions 12, 13 and 14).
    (d) To allow for adequate review, each Annual Work Schedule shall normally contain proposed locations, structures and conditions on construction for water crossings expected to be scheduled for construction during the term of the following Annual Work Schedule.
    (e) For each prescribed burn project planned during the term of an Annual Work Schedule, an operational plan shall be prepared in accordance with the requirements for prescribed burn planning as described in the Forest Operations and Silviculture Manual, and shall be appended to the Annual Work Schedule upon MNR approval.
    (f) For each aerial herbicide and insecticide project planned during the term of an Annual Work Schedule, a project description and a project plan shall be prepared in accordance with the requirements for aerial herbicide and insecticide planning as described in the Forest Operations and Silvicultural Manual. The project description and project plan shall be appended to the Annual Work Schedule upon MNR approval.
    (g) The Annual Work Schedule shall be reviewed by MNR district staff and approved by the MNR District Manager. The Local Citizens Committee shall be provided the opportunity to inspect the Annual Work Schedule prior to its approval. The Annual Work Schedule shall be available for public inspection after MNR approval, with public notices identifying a person who can be contacted in relation to forest operations on the management unit as well as opportunities for fuelwood and tree planting jobs.

Management Unit Annual Reporting

26. The Forest Management Planning Manual shall describe provisions for the preparation of Management Unit Annual Reports, including provisions for the use of text, tables and maps, and shall include the following:
    (a) Each year, a Management Unit Annual Report shall be prepared and certified by a Registered Professional Forester to report on the implementation of forest management operations during the preceding year. Each Management Unit Annual Report shall include a discussion of the progress to date in meeting the planned level of activity described in the Forest Management Plan. It shall also include a discussion of any significant events affecting the implementation of the Forest Management Plan. At the time of submission of the Management Unit Annual Report, records of pesticides used for forest management purposes in the current year, shall also be submitted.

(b) In addition to these reporting requirements, the Management Unit Annual Reports for Years Three, Seven and Ten shall provide further information as described in (c), (d), and (e) of this term and condition.

(c) The Year Three Management Unit Annual Report shall serve as the mid-plan review by describing progress in plan implementation and specifically addressing the determination of whether the long-term management direction remains valid for the second five-year operational term.

- (i) If valid, the report shall recommend that planning for the second five-year operation term proceed, or
- (ii) If substantially valid, but requiring minor adjustments to the long-term management direction, the report shall recommend that planning proceed for the second five-year operational term with appropriate modifications, or
- (iii) If not valid, the report shall recommend that an unscheduled plan renewal occur.
- (iv) The MNR Regional Director shall endorse the Year Three Management Unit Annual Report following a review that ensures the recommendations are acceptable for implementation.

(d) The Year Seven Management Unit Annual Report shall serve as background information in the preparation of the upcoming Forest Management Plan and shall include preliminary information on the following items:

- (i) an assessment of the achievement of the Forest Management Plan management objectives;
- (ii) a review and update of the assumptions used to prepare the previous Forest Management Plan; and
- (iii) conclusions and recommendations for consideration in the preparation of the upcoming Forest Management Plan.

(e) The Year Ten Management Unit Annual Report shall serve as background information in upcoming planning processes and shall include final information on the following items:

- (i) an assessment of the achievement of the Forest Management Plan management objectives;
- (ii) a review and update of the assumptions used to prepare the previous Forest Management Plan; and
- (iii) final conclusions and recommendations.

Monitoring

Management Unit Level Monitoring

Forest Operations Inspections

27. (a) MNR shall ensure that monitoring of the forest management activities of access, harvest, renewal and maintenance will take place through a forest operations inspection program. Monitoring will consist of compliance with approved Forest Management Plans and any other conditions imposed on operations by legislation or policy.

(b) MNR shall deliver consistent, fair and firm enforcement of forest-related statutes and regulations.

(c) MNR shall maintain a forest compliance handbook that will describe the details regarding a forest operations inspection program including scope, documentation and record retention.

(d) Results of the forest operations inspection monitoring program shall be available for public inspection until at least one year after the expiry of a forest management plan for the management unit.

Provincial Level Monitoring

Audit Program

28. MNR shall ensure that independent forest audits for management units are conducted in accordance with the requirements of the *Crown Forest Sustainability Act* and its regulations (Sections 26.3 and 69.1(31)). In addition, MNR shall propose a regulation under the *Crown Forest Sustainability Act* (Section 69.1(31)) governing the conduct of these audits, within one year of the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval.

Silvicultural Effectiveness

29. MNR shall maintain a manual that provides direction for silvicultural effectiveness monitoring to support systematic reporting to the general public. That direction will include:
    (a) an identification of acceptable methodologies;
    (b) a description of the timing of monitoring activities; and
    (c) requirements for the documentation and reporting of monitoring results.

Wildlife Population Monitoring

30. MNR shall continue to implement a Provincial Wildlife Population Monitoring Program within the Area of the Undertaking and shall continue to investigate wildlife population monitoring methods. This program will provide long-term trend data on representative terrestrial vertebrate species and will collect information to support the testing of the effectiveness of forest management guides. The species to be monitored include:
    (a) species which benefit from forests managed for the purposes of maintaining early successional stages and where management direction comes from the Timber Management Guidelines for the Provision of Moose Habitat or the Forest Management Guidelines for the Provision of White-tailed Deer Habitat, and their successors;
    (b) species which benefit from forests managed for purposes of maintaining late successional stages and where management direction comes from the Forest Management Guidelines for the Provision of Marten Habitat or the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat, and their successors; and
    (c) species which utilize the following habitat types and features: snags, dead and downed woody material, riparian areas, mature/overmature stands, and large areas in a similar successional stage.

Monitoring Guideline Effectiveness

31. MNR shall maintain a program of scientific studies to assess the effectiveness of provincial implementation manuals (guides).

Reporting

Provincial Annual Report on Forest Management

32. (a) MNR shall annually prepare a provincial report (the "Provincial Annual Report on Forest Management") that shall be tabled in the Legislature. The report will be provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following information:

(i) a summary of Ontario's land and Crown forest base;

(ii) forest products industry statistics;

(iii) a description of forest disturbance, including:

- **area and volume of Crown forest resources harvested,**
- **a summary of the discussions contained in Management Unit Annual Reports on the subject of areas harvested under the clearcut silvicultural system, based on size and frequency parameters required by implementation manuals (guides) and the Forest Management Planning Manual, and**
- **areas and or volumes of losses associated with natural forces such as insects, disease, forest fire, blowdown.**

(iv) provincial government revenues from Crown charges, as defined by the *Crown Forest Sustainability Act*, including payments associated with penalties, offences and the harvest of Crown forest resources;

(v) a summary of expenditures from the Forest Renewal Trust and the Forestry Futures Trust;

(vi) a summary of the amount of regeneration, tending and protection activities;

(vii) a summary of silvicultural effectiveness;

(viii) a summary of compliance monitoring results and an enforcement summary;

(ix) a summary of forest access road construction, maintenance, abandonment and roads subject to access control;

(x) a summary of major findings reported in independent forest audits;

(xi) a description of significant advances and milestones in scientific research, technical development programs, and policy developments related to forest management; and

(xii) a summary of the progress of on-going negotiations with Aboriginal peoples on a district-by-district basis, as per MNR Term and Condition 34.

State of the Forest Report

33. (a) MNR shall prepare a report on the state of the Crown forests (the "State of the Forest Report") at least once every five years in accordance with the *Crown Forest Sustainability Act*. The report shall be tabled in the Legislature, provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following:
- (i) summaries of the most recent versions of the Forest Resources of Ontario and An Assessment of Ontario's Forest Resources; and
- (ii) an examination of the management of the Crown forests including a discussion of the status of the forest resource through the use of appropriate indicators. That examination will include:
    - an analysis of information consolidated from the previous five Provincial Annual Report on Forest Management;
    - a description of significant advances in forest research and other developments and a discussion of how the results are being incorporated into forest management; and
    - a synopsis of the findings of independent forest audits conducted in the previous five years and a discussion of how the findings are being addressed in forest management.
- (iii) a summary of the progress of on-going negotiations with Aboriginal peoples on a district-by-district basis, as per MNR Term and Condition 34.

Negotiations with Aboriginal Peoples

34. During the term of this approval, MNR District Managers shall conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management planning. These negotiations will include but are not limited to the following matters:
    - (a) Providing job opportunities and income associated with bush and mill operations in the vicinity of Aboriginal communities.
    - (b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities.
    - (c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist.
    - (d) Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves.
    - (e) Development of programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with Indian and Northern Affairs Canada.
    - (f) Other forest resources that may be affected by forest management or which can be addressed in the forest management planning process.

    MNR shall report on the progress of these on-going negotiations district-by-district in the Provincial Annual Report on Forest Management that will be submitted to the Legislature.

Continuing Development and Programs

Advisory Committees

Regional Advisory Committees

35. (a) The Ministry of Natural Resources shall maintain Regional Advisory Committees whose purpose is to advise the MNR Regional Director on forest management planning and related matters brought to the committee by the MNR Regional Director.

(b) Each Regional Advisory Committee shall be chaired by the appropriate MNR Regional Director; who will represent the Ministry. The MNR Regional Director may appoint a co-chair from among the committee members.

(c) Each MNR Regional Director shall seek a representative, where possible, from each of the following groups to appoint to the Regional Advisory Committee:

(i) The Ontario Parks Council
(ii) The Northern Ontario Tourist Outfitters Association
(iii) The Ontario Federation of Anglers and Hunters
(iv) The Ontario Forest Industries Association
(v) The Ontario Lumber Manufacturers Association
(vi) Ontario Fur Managers Federation
(vii) Aboriginal Organizations
(viii) Ontario Campers Association
(ix) The Federation of Ontario Naturalists and other environmental groups
(x) The Ontario Association of Chambers of Commerce
(xi) The Ontario Professional Foresters Association
(xii) The Association of Municipalities of Ontario
(xiii) Forest Industry workers
(xiv) Trade unions
(xv) Ontario Prospectors Association
(xvi) Recreation trail organizations
(xvii) Other interest groups

(d) Each MNR Regional Director shall have the discretion to expand the Regional Advisory Committee membership to reflect a balance of regional concerns.

(e) Each Regional Advisory Committee will be supported by MNR, which will act as the secretariat.

(f) Terms of Reference will be provided by the appropriate MNR Regional Director for each Regional Advisory Committee and will include:

(i) term of appointment;
(ii) frequency of meetings;
(iii) roles of committee members;
(iv) reimbursement of expenses for attendance at meetings;
(v) operational procedures for the committee; and
(vi) the geographic area associated with the committee.

(g) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

Provincial Level Advisory Committees

Provincial Forest Policy Committee

36. (a) The Ministry of Natural Resources shall maintain a Provincial Forest Policy Committee to advise the MNR Deputy Minister on provincial forest policy and other related matters brought to the committee by the MNR Deputy Minister.

(b) The Minister of Natural Resources shall appoint members to this committee and the committee shall be chaired by the MNR Deputy Minister.

(c) The Provincial Forest Policy Committee will be supported by MNR, which will act as the secretariat.

(d) Terms of Reference for the Provincial Forest Policy Committee will be provided by the MNR Deputy Minister and will include:

- **(i) membership;**
- **(ii) term of appointment;**
- **(iii) frequency of meetings;**
- **(iv) roles of committee members;**
- **(v) reimbursement of expenses for attendance at meetings; and**
- **(vi) operational procedures for the committee.**

(e) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

Provincial Forest Technical Committee

37. (a) The Ministry of Natural Resources shall maintain a Provincial Forest Technical Committee to advise the MNR Assistant Deputy Minister, Forests Division, on ensuring implementation manuals (guides) are kept current in respect of scientific knowledge and management practices, by acting as a review board for proposed changes and recommending priorities for work on new or existing implementation manuals (guides). The committee may also advise on other technical matters brought to the committee by the MNR Assistant Deputy Minister, Forests Division.

(b) The MNR Deputy Minister shall appoint members to this committee and the committee shall be chaired by the MNR Assistant Deputy Minister, Forests Division.

(c) The Provincial Forest Technical Committee will be supported by MNR, which will act as the secretariat.

(d) Terms of Reference will be provided by the MNR Assistant Deputy Minister, Forests Division for the Provincial Forest Technical Committee and will include:

- **(i) membership;**
- **(ii) term of appointment;**
- **(iii) frequency of meetings;**
- **(iv) roles of committee members;**
- **(v) reimbursement of expenses for attendance at meetings; and**
- **(vi) operational procedures for the committee.**

(e) The committee shall keep a summary of meeting discussions that shall be available to the public upon request.

Implementation Manuals

Implementation Manuals Review and Revision

38. (a) MNR's approved forest management guides, as updated in accordance with (b) to

(e) of this term and condition, shall be used in the planning and implementation of forest management activities. The application and use of new guides and the direction they contain will be specified within the new guides and the Forest Operations and Silviculture Manual.

(b) MNR shall maintain a list of current forest management guides and post this list, along with the most recent version of each guide, on its Internet web site. With the advice of the Provincial Forest Technical Committee, MNR may update the list as required, subject to any revision, amalgamation, categorization or preparation of new or existing guides.

(c) Within five years of the approval of a guide, and thereafter at least every five years, MNR shall review each guide to determine the need for revision or amalgamation of the existing guide or preparation of any new guides. The Provincial Forest Technical Committee shall have an integral role in the review of existing guides, and the setting of priorities for the revision of existing guides; or amalgamation with other guides; or the preparation of any new guides that may be required from time to time.

(d) The intent of the review of the guides is to ensure that they reflect current scientific knowledge as it applies to Ontario. In considering the need for revisions, amalgamations, or new guides, in setting priorities, and in determining the appropriate contents of the guides, the following factors shall be considered:

- **(i) the results of applicable scientific research;**
- **(ii) the results of relevant and appropriate monitoring programs;**
- **(iii) the advantages and disadvantages of changes to current forest management practices; and**
- **(iv) advances in analytical and operational technology.**

(e) Where feasible, and with the advice of the Provincial Forest Technical Committee, proposed new or revised guides or their components, should be pilot tested to assess their effectiveness and their efficiency in application prior to approval for implementation.

(f) Where existing guides are revised or amalgamated, or new guides are prepared, draft guides shall be subject to review by appropriate government ministries and agencies, known provincial organizations and associations with expertise in the subject matter, as well as members of the public through the *Environmental Bill of Rights* Environmental Registry prior to finalization and approval by MNR.

Emulating Natural Disturbance Patterns

39. For clearcut harvest operations, areas shall be planned for harvest in accordance with the most current direction and standards in MNR's approved implementation manual(s) or guide(s) relating to the emulation of natural disturbance patterns, as described in the Forest Operations and Silviculture Manual. Currently, that direction provides for a range of sizes of clearcuts, which generally shall not exceed 260 hectares. It also includes a standard that calls for 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region to be less than 260 hectares in size. In addition, that direction also includes requirements for temporal and spatial separation requirements for planned clearcuts.

Information Collection and Management

Inventory, Information and Management Systems

40. MNR shall ensure that information management systems necessary to support forest management planning, which enhance the capability to systematically collect, store, update and retrieve information, continue to be developed. Values information will be generally available to the public.

Forest Ecosystem Classification System

41. MNR shall continue the development of the Ecological Land Classification Program through the following initiatives:
- **(a) ensuring appropriate interpretation manuals are available to assist in the use of Ecological Land Classification in forest management planning;**
- **(b) continuing to improve inventory and mapping technologies;**
- **(c) maintaining the classification program for the entire Area of the Undertaking; and**
- **(d) continuing to provide for technology transfer and training programs.**

Scientific Research and Technical Development

Growth and Yield Program

42. MNR shall continue to support and implement a provincially coordinated program to obtain further information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

Full-tree Harvest and Full-tree Chipping Studies

43. MNR shall continue to investigate, through a long-term study, the effects of full-tree harvest and full-tree chipping on long-term forest productivity.

Tending and Protection Improvement Programs

44. MNR shall continue to ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests by maintaining policies and procedures that ensure proper and safe use of registered and approved products, and by collaborating with research partners engaged in tending and protection research initiatives.

Data Systems and Analytical Methodologies

45. MNR shall continue to maintain and further develop methodologies for use in forest management planning which:
- **(a) address social and economic considerations when developing prescriptions and making forest management decisions;**

(b) investigate and address wildlife habitat supply, biological diversity and landscape management analyses across both temporal and spatial scales;
(c) capture, store and provide access to spatial information using geographic information system technology;
(d) continue to incorporate the use of geographic information system technology in the development of models and tools; and
(e) ensure staff are trained in the use and application of the methodologies and technologies which are developed.

Professional and Technical Training Programs

46. MNR shall ensure comprehensive professional and technical training programs are maintained so that the knowledge of those persons involved in the planning and implementation of forest management activities is continually upgraded.

Public Education on Forest Management

47. (a) MNR shall continue to participate in public education regarding the management of Ontario's forests, both directly and in partnership with organizations involved in the administration and delivery of educational programs in forestry.
(b) Upon each significant revision of the Forest Management Planning Manual, MNR shall update the brochure which outlines the forest management planning process in a simplified form. The brochure will be available for general public distribution in English, French and native languages.

Additional Proposals Resulting From Public Consultation

Wood Supply Strategy

48. (a) MNR, in consultation with the forest industry and other interested parties, shall develop a provincial wood supply strategy comprised of regional wood supply strategies. This strategy will include the following components:
- **(i) an examination of past harvesting levels;**
- **(ii) a long term forecast for industrial wood supply, by species group;**
- **(iii) the forecast demand for industrial wood supply, by species group;**
- **(iv) an identification of anticipated wood supply issues; and**
- **(v) a description of strategies to address the identified wood supply issues.**

(b) All strategies contemplated shall be consistent with the requirements of the *Crown Forest Sustainability Act* and, where applicable, will support the Ontario Forest Accord. The provincial strategy will be developed within one year of the extension and amendments of this EA Approval. MNR will seek the advice of the Provincial Forest Policy Committee in the development of the provincial strategy, and will provide an opportunity for public review and comment on the provincial strategy.
(c) Implementation of these strategies will be reported in the State of the Forest Report.

Horse Logging

49. Where horse logging businesses are established or where business interest is demonstrated to establish viable new horse logging ventures, forest management plans shall make available for horse logging up to two percent of the available harvest area. In making this wood available, existing wood supply commitments to forest resource processing facilities shall be maintained.

Administration of this EA Approval

Phase-In Provisions for this EA Approval

50. The extension and amendments of this EA Approval shall come into force on the latter of May 19, 2003, or the date of the final decision by the Minister of Environment and Energy to approve the extension and amendments.

51. The terms and conditions of the extended and amended EA Approval shall be phased in as follows.
    (a) The Forest Management Planning Manual shall be amended as follows:
        (i) MNR shall propose amendments to the Forest Management Planning Manual by incorporating the forest management planning related terms and conditions of this EA Approval within 12 months of the latter of May 19, 2003, or, the date of the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval; and
        (ii) Those proposed amendments to the Forest Management Planning Manual shall be subject to review and comment by the public in accordance with the *Crown Forest Sustainability Act*, and its regulations.
    (b) Those proposed amendments to the Forest Management Planning Manual shall also be reviewed by the Ministry of Environment and Energy for consistency with the final decision by the Minister of Environment and Energy to approve the extension and amendments of this EA Approval.
    (c) Once the amended Forest Management Planning Manual takes effect, in accordance with the *Crown Forest Sustainability Act*, Section 68(10), the requirements of the amended Forest Management Planning Manual will be applied on a management unit by management unit basis with the initiation of the planning process for:
        (i) the next minor or major amendment to an existing forest management plan, with whatever modifications are necessary in the circumstances;
        (ii) the next scheduled or unscheduled renewal of a forest management plan; or
        (iii) a contingency plan.
    (d) All other terms and conditions shall come into force immediately, except as otherwise specified in these terms and conditions.
    (e) MNR shall maintain, on its Internet web site, the most current version of the Forest Management Planning Manual.

5-Year EA Report and Monitoring of this EA Approval

52. (a) In the sixth year following the extension and amendment of this EA Approval, and

every five years thereafter, MNR shall prepare a report (the "Five-Year EA Report") on the ongoing operation of this EA Approval. The report shall be provided to the Ministry of Environment and Energy and made available to the public.

(b) The report shall include the following:

- **(i) a discussion of the overall effectiveness of this EA Approval in meeting the purpose of the undertaking, namely to provide a continuous and predictable supply of wood for Ontario's forest products industry;**
- **(ii) a summary of the most recent five-year report on the state of the Crown forests as required by the *Crown Forest Sustainability Act*, Section(22);**
- **(iii) a discussion of the environmental, social and economic benefits realized from implementing the undertaking;**
- **(iv) a description of the implementation of the forest management planning process including: the number of forest management plans and their associated cost and time to prepare and approve; contingency plans; plan amendments; disposition of requests for individual environmental assessments; and, a discussion of related public consultation;**
- **(v) a summary and discussion of contributions to and expenditures from the Forest Renewal Trust and the Forestry Futures Trust;**
- **(vi) identification of the upcoming forest management plan preparation schedule, and where to obtain the most current schedule;**
- **(vii) a discussion of significant initiatives related to the implementation of this EA Approval;**
- **(viii) a description of the number, type and disposition of amendments to this EA Approval;**
- **(ix) a description of where the public can obtain a current copy of the consolidated terms and conditions of this EA Approval, as amended;**
- **(x) a discussion of specific issues and problems related to implementation of this EA Approval and the manner in which they have been addressed to date; and**
- **(xi) a description of actions to be taken to improve the overall implementation this EA Approval.**

Amending Provisions for the EA Approval

53. Amendments may be made to any term and condition of this EA Approval using the following process:

(a) Two types of amendments to the terms and conditions of this EA Approval will be considered:

- **(i) Minor amendments are those amendments that do not substantively change this EA Approval. For example, clarification of wording and streamlining of redundant processes would be considered minor amendments; and**
- **(ii) Major amendments are those amendments that substantively change this EA Approval. For example, a proposal to make use of a new method for carrying out the undertaking, such as an operational fertilization program would be considered a major amendment.**

(b) Public consultation shall be undertaken on a preliminary amendment proposal and will be used to develop a proposed amendment. Both the preliminary amendment proposal and the subsequent proposed amendment shall, at a minimum, contain the following information:

(i) a brief rationale for the amendment with particular reference to the new information or change in circumstances giving rise to the need for an amendment;

(ii) a brief rationale for the categorization of the amendment as minor or major;

(iii) a detailed discussion of any expected effects on the natural environment of proceeding with the amendment, including the science underlying the proposal;

(iv) a detailed discussion of any social effects of proceeding with the amendment, including potential impacts on affected and interested persons;

(v) a detailed discussion of any economic effects of proceeding with the amendment, including a discussion of costs;

(vi) a discussion of how the amendment may be implemented including the timeframes and geographic application; and

(vii) a discussion of the public consultation conducted to date on the proposed amendment.

(c) Amendments may be proposed by MNR, the Ministry of Environment and Energy or other persons in accordance with the appropriate amending process as set out in this term and condition.

(d) The following process shall be followed for minor amendments proposed by MNR:

(i) MNR shall bring forward any proposal for a minor amendment to the attention of the Minister of Environment and Energy, or delegate.

(ii) Within fifteen days of receiving MNR's proposal, the Minister of Environment and Energy, or delegate, may instruct MNR to consult further with the affected persons. Where further consultation is required, a thirty-day review period for responses will be provided.

(iii) If no further consultation on the proposal is required, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days of notification of the proposed amendment. If consultation is required, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days after submission of the results of the consultation.

(iv) Based on MNR's proposal and any comments received, the Minister of Environment and Energy, or delegate, may determine that there are no significant environmental concerns resulting from the proposal, and approve the amendment.

If the Minister of Environment and Energy, or delegate, believes that there are significant environmental concerns which cannot be resolved through conditions of approval, or negotiation between MNR and the concerned person, the Minister of Environment and Energy, or delegate, may declare that the amendment can only be evaluated through the major amendment process.

(v) If the amendment is approved, a notice of amendment shall be given to all persons who made submissions and a copy of the notice shall be placed in the public record maintained by the Ministry of Environment and Energy.

(e) The following process shall be followed for major amendments proposed by MNR:

(i) MNR shall bring forward any proposal for a major amendment to the attention of the Minister of Environment and Energy, or delegate.

(ii) Within thirty days of receiving MNR's proposal, the Minister of Environment and Energy, or delegate, may instruct MNR to conduct further public consultation including notification of the public and any affected persons.

Where consultation is required, a minimum thirty-day consultation period will be provided.

(iii) If no consultation is required on the proposal, the Minister of Environment and Energy, or delegate, shall make a decision within sixty days of notification of the proposed amendment. If consultation is required on the proposal, the Minister of Environment and Energy, or delegate, shall make a decision on the proposal within sixty days after submission of the results of the consultation.

(iv) Based on MNR's proposal and any comments received on the proposal, the Minister of Environment and Energy, or delegate, may determine that there are no significant environmental concerns resulting from the proposal and approve the amendment.

If the Minister of Environment and Energy, or delegate, believes that there are significant environmental concerns which cannot be resolved through conditions of approval, or negotiation between MNR and the concerned person, the Minister of Environment and Energy, or delegate, may deny the request for the amendment as proposed.

(v) If the amendment is approved, a notice of amendment shall be given to all persons who made submissions and a copy of the notice shall be placed in the public record maintained by the Ministry of Environment and Energy.

(f) The following process shall be followed for minor and major amendments proposed by the Ministry of Environment and Energy:

(i) the Ministry of Environment and Energy may propose an amendment to this EA Approval;

(ii) if the Minister of Environment and Energy, or delegate, finds that an amendment may be necessary, the Minister of Environment and Energy, or delegate, shall notify MNR as soon as possible with respect to the proposed amendment. MNR shall be given a reasonable opportunity to comment;

(iii) after providing MNR with a reasonable opportunity to comment, the Ministry of Environment and Energy shall direct MNR to prepare and submit the amendment for approval;

(iv) based on MNR's submission, and after consultation with the Minister of Natural Resources, the Minister of Environment and Energy, or delegate may approve the amendment; and

(v) if the amendment is approved, a notice of amendment shall be placed in the public record maintained by the Ministry of Environment and Energy.

(g) The following process will be used for minor and major amendments proposed by persons other than the Ministry of Environment and Energy or MNR:

(i) MNR shall consider all requests for amendments of this EA Approval submitted by persons other than the Ministry of Environment and Energy and MNR;

(ii) a person that proposes an amendment to this EA Approval must first notify MNR. The notification shall be in writing and shall be in accordance with the requirements of part (b)(i) to (b)(vi) of this term and condition;

(iii) MNR shall notify the person within sixty days of receipt of an amendment request, with respect to whether:

- MNR intends to proceed with the proposed amendment; or
- MNR will attempt to resolve the issue by means other than an amendment (e.g. protocol, memorandum); or
- MNR does not intend to proceed with the proposed amendment;

(iv) if MNR intends to proceed with the proposed amendment, MNR may bring the proposed amendment forward as a minor or major amendment in accordance with parts (d) or (e) of this term and condition;

(v) if MNR does not intend to proceed with the proposed amendment, or the issue is otherwise unresolved, MNR shall refer it to the Minister of Environment and Energy, or delegate, for consideration. The Minister of Environment and Energy, may concur with MNR and reject the proposal or pursue the concerned person's proposed amendment as a Ministry of Environment and Energy proposed amendment, in accordance with the process outlined in part (f) of this term and condition.

Recorded Proceedings of the Timber Class EA Hearings

54. MNR and the Ministry of Environment and Energy shall continue to maintain copies of the recorded proceedings of the 1988-1992 Timber Class Environmental Assessment Hearings including transcripts, exhibits, final argument and where possible, interrogatories. MNR shall continue to maintain a copy for its use in the appropriate main office location associated with the Forest Management Branch, or its successor. The Ministry of Environment and Energy shall continue to maintain a copy with the Environmental Assessment and Approvals Branch, or its successor, for public use and for its own use in monitoring compliance with this approval.

5.0 PROGRESS REPORTS

Term and condition 114 requires that this Timber Class EA Review make recommendations regarding an extension and amendments of this EA Approval on the basis of supporting information in the form of various records and reports.

In addition to the specific reporting requirements of T&C 114, MNR has also provided information on T&C 77, in the progress report, entitled Negotiations with Aboriginal Peoples. MNR has described the implementation experience for other terms and conditions. This information can be found in Section 3.0 of this Timber Class EA Review. Table 1 provides an index describing the sections where each term and condition is discussed.

T&C 114

(a) During the eight year of this approval, MNR shall undertake a review of this undertaking and submit that review to the Minister of Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:

- *(i) A complete record of all amendments to the approval pursuant to Condition 112 for the undertaking during the term of this approval;*
- *(ii) A complete record of all amendments to Timber Management Plans detailing their categorization as administrative, minor or major as set out in Condition 67 and Appendix 13;*
- *(iii) A complete record of all bump-up requests, and their disposition, during the term of this approval;*
- *(iv) The most recent five-year "State of the Forest" report, which is described in Condition 84 and Appendix 22;*
- *(v) Progress reports on the studies and programs which are described in Conditions 24, 27, 52(e), 80, 81, 93 to 110 and Appendix 19;*
- *(vi) Any additional documentation which MNR considers to be appropriate or necessary to support its recommendations for an extension of the approval of the undertaking;*
- *(vii) An overview of the success and failure of public consultation reported by:*
  - *Local Citizens Committees and contained in supplementary documentation of Timber Management Plans,*
  - *Any similar statement resulting from the native consultation process, and*
  - *The issue resolution process;*
- *(viii) a complete record of all Contingency Plans as set out in Condition 66 and Appendix 12;*
- *(ix) a complete record of major problems identified through independent audit program as provided in Condition 86; and*
- *(x) a complete record of estimated and actual spending to achieve regeneration objectives as provided for in Condition 38(a); Appendix 8, section 1(a)(iv); Appendix 18, section 1(o); Appendix 20, section 1(g); and Appendix 22, section 1(k).*

Table of Contents

Visual Resources - T&C 24 306

Environmental Guidelines - T&C 27(a) and 94(b) 309

Clearcut Harvesting – Planning and Reporting - T&C 27(b)&(c) 313

Criteria for Water Crossing Removal - T&C 52(d)&(e) 324

Negotiations with Aboriginal peoples - T&C 77 326

Long-term Scientific Studies – Moose Habitat - T&C 80 and Appendix 19(1) 379

Long-Term Scientific Studies – Fish Habitat - T&C 80 and Appendix 19(2) 386

Long-Term Scientific Studies – Tourism Values - T&C 80 and Appendix 19(3) 397

Long-Term Scientific Studies – Other Wildlife - T&C 80 and Appendix 19(4) 404

Wildlife Population Monitoring - T&C 81 411

Implementation Manuals - T&C 93 415

Review and Revision of Silvicultural Guides; Boreal Mixedwood Guide Development - T&C 94(a)&(d) 424

Marten and Pileated Woodpecker Habitat Guidelines - T&C 94(c) 428

Collection of Inventory Information and Development of Information Systems - T&C 95 431

Silvicultural Effectiveness Monitoring - T&C 96 435

Forest Ecosystem Classification System - T&C 97 441

Northern Ontario Wetland Evaluation System - T&C 98 445

Areas of Natural and Scientific Interest - T&C 99 447

Growth and Yield - T&C 100 452

Study of Effects of Full-Tree Harvest and Full-tree Chipping - T&C 101 458

Tending and Protection Programs - T&C 102 464

Old Growth - T&C 103 487

Social and Economic Analysis - T&C 104 495

Timber Production Policy - T&C 105 499

Roadless Wilderness Policy - T&C 106 503

Wildlife Habitat Supply Modelling and Landscape Management Methodologies - T&C 107 . 506

Geographic Information Systems - T&C 108 514

Professional and Technical Training Programs - T&C 109 and Appendix 23 516

District Land Use Guidelines - T&C 110 528

Amendments to the EA Approval - T&C 114(a)(i) 532

Amendments to Forest Management Plans - T&C 114(a)(ii) and 67 and Appendix 13 533

1 Bump-Up Requests - T&C 114(a)(iii), 70 and 71 538
2 State of the Forest Report - T&C 114(a)(iv) and 84 544
3 Overview of Success and Failure of Public Consultation - T&C 114(a)(vii) 546
4 Contingency Plans - T&C 114(a)(viii) and 66 and Appendix 12 553
5 Major Problems Identified Through Independent Forest Audits - T&C 114(a)(ix) and 86 557
6 Regeneration Expenditures – 114(a)(x), 38(a), Appendix 8(1), 18(1), 20(1) and 22(1) 561

Visual Resources - T&C 24

Current Requirement

Term and condition 24 requires plan authors to report on the status of complaints about visual impacts and the rationale for associated prescriptions in a section in FMPs on visual resource management. Unresolved disputes over visual resources are to be summarized in the management unit annual report and in the five-year State of the Forest Report.

> ***T&C 24***
>
> *Timber Management Plans shall contain a section on Visual Resource Management where the Plan author will report the status of complaints about visual impacts and the rationale for the prescription made to address the complaint. Disputes over visual resources that remain unresolved shall be summarized in the Annual Report for the Forest Management Unit pursuant to Condition 79 and Appendix 18, section 1(n), and in the five-year State of the Forest Report pursuant to Condition 84 and Appendix 22, section 1(l).*

Progress Report

Forest Management Plans

The FMP Manual requires FMPs to include information on visual concerns in several sections:

- Harvest selection criteria – visual concerns are one of the factors that may be considered in developing the criteria (Page A-84, line 14)
- Area of concern prescriptions – a viewscape analysis may be required to develop prescriptions for remote tourism interests (Page A-87, lines 13-15)
- Table FMP-17 Operational Prescriptions for Areas of Concern – objections to prescriptions that address visual concerns must be specifically highlighted (Page A-91, lines 31-32)

These planning provisions were developed through the consultative process as described in T&C 90, including a review by the EA Board in 1995.

Visual concerns can also be addressed in other parts of an FMP and as part of the planning process. For example, aesthetics may be addressed through developing the issues, objectives and strategies for the FMP; completing area of concern planning for all values; and following the issue resolution procedure. The outcomes of these activities are documented in the FMP.

Further, the rationale for a selected area of concern prescription is included in the supplementary documentation for values for which specific direction is not contained in an implementation manual. If a concerned person is not satisfied with the selected prescription at the time of the FMP approval, his or her comments are included in the supplementary documentation, and Table FMP-17 must indicate that there is an objection to the prescription. Objections to prescriptions that address visual concerns must be specifically highlighted in the table. Thus, FMPs both report on the status of the visual concerns and document the rationale for the prescription.

If an understanding cannot be reached between the plan author and a concerned person on how best to address visual concerns during FMP development, the issue resolution procedure can be invoked. Issue resolution must be completed before MNR approves the FMP and is summarized in the FMP supplementary documentation.

The planning process is designed so that FMPs are approved by the MNR Regional Director when all issues are dealt with, either by the planning team, or through the issue resolution procedure. Some issues may not be resolved to the full satisfaction of the concerned person; however, he or she will have been given fair opportunity to have their concern addressed as part of the FMP planning process.

If, after the issue resolution procedure is completed, the concerned person is still not satisfied with the MNR Regional Director's decision, he or she may request the Minister of Environment and Energy to designate the proposed forest management activities for an individual environmental assessment by way of a bump-up request. A decision on a bump-up request is normally made by the Minister of Environment and Energy before an FMP is implemented. All documentation specific to a bump-up request is kept on file with the FMP. See progress report for T&C 114(a)(iii) Record of Bump-Up Requests for a summary of bump-up requests made since the EA Approval.

As part of this Timber Class EA Review, several FMPs from across the province were examined to determine the manner in which visual concerns were addressed. Results from this review show that a few planning teams described issues and developed objectives that reference aesthetics. Similarly, some included harvest selection criteria that addressed visual concerns. As a matter of course, planning teams addressed visual concerns through the development of area of concern prescriptions; therefore, most have not found it necessary to describe issues, objectives, and harvest selection criteria specifically related to visual concerns. Where they exist, objections relating to visual concerns have been documented in Table FMP-17, consistent with the FMP Manual requirements.

Visual aesthetics were addressed in the development of area of concern prescriptions, often in association with concerns for noise and access. These prescriptions were associated with single or multiple values. Some examples of these values are highways, canoe routes, portage trails, tourism establishments, cottaging areas and waterway parks. Area of concern prescriptions were developed for these and other associated values. Common area of concern prescriptions which address visual aesthetics include shoreline reserves, partial harvest areas, seasonal restrictions to harvesting activities and restrictions on road locations.

Management Unit Annual Reports

Disputes over visual resources that remained unresolved have been summarized in management unit annual reports and the State of the Forest Report, 2001, Section 4.1.I, Page 4-83.

A review of disputes over visual concerns as summarized in management unit annual reports from across the Area of the Undertaking from 1994/95 to 1999/00 was conducted and is summarized in Table 5.

Table 5. Summary of spring and fall management unit annual reports filed and visual resources activity reported.

Management Unit	Fiscal Reporting Year					
	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
Total spring renewal annual reports filed	63	72	76	65	64	62
Total fall depletion annual reports filed	81	76	75	65	62	50
No known outstanding visual concerns	0	0	2	1	0	2
Visual concern reported*	0	0	1	2	1	0
Total	0	0	3	3	1	2

* Represents a total of two concerns that were reported on over two years.

Five of the management unit annual reports indicate there are no outstanding disputes over visual concerns. Two management units reported concerns regarding visual aesthetics but neither of them were described as being outstanding disputes from the FMP. The first case (Mississagi management unit) involved a road that the concerned person requested to have removed from the viewshed of a local lake. This was not done, as the decision of MNR was that the existing route minimized environmental damage. The second case (Timmins management unit) involved a visual concern that was raised and addressed in the middle of a planning term. Field visits were conducted with the concerned person to discuss how the FMP's approved area of concern prescriptions protect the environment and wildlife habitat.

The rest of the management units did not report any unresolved disputes over visual concerns.

Management unit annual reports suggest that visual concerns have been addressed through the planning process, with all of its checks and balances, and do not remain unresolved at the time of FMP implementation. However, this is not to say that visual concerns are resolved to the absolute satisfaction of the concerned person in all cases.

Synopsis

The FMP Manual provides direction regarding the planning process to address visual resources. A review of individual FMPs found that visual aesthetics were planned for via harvest selection criteria and area of concern prescriptions. The prescriptions and their rationale were often developed in conjunction with other values.

Management unit annual reports and the State of the Forest Report, 2001, summarized disputes over visual resources. Only four visual concerns were reported.

MNR is making recommendations regarding this term and condition in Section 3.1.8 Planning of Harvest Renewal and Maintenance Operations, and 3.1.11 Management Unit Annual Reporting, of the Timber Class EA Review.

Environmental Guidelines - T&C 27(a) and 94(b)

Current Requirement

Term and condition 94(b) required the development of an implementation manual to address the protection of the physical environment. An associated term and condition, T&C 27 (a), further directs that the restriction on clearcut harvesting, which requires a range of sizes of clearcuts not to exceed 260 ha and standards for configuration and contiguity of clearcuts be incorporated into the implementation manual. Term and condition 27(b) allows for clearcuts to exceed 260 ha for sound biological and silvicultural reasons, with the reasons provided in the FMP. See progress report for T&C 27(b) and (c) Clearcut Harvesting – Planning and Reporting, for more information on planned clearcuts.

T&C 27

MNR shall implement a restriction on clearcut harvesting requiring a range of sizes of clearcuts not to exceed 260 hectares. MNR shall also develop standards for configuration and contiguity of clearcuts which will ensure that the purpose of this restriction is not frustrated.

(a) These restrictions and standards shall be incorporated into the Environmental Guidelines for Timber Management Activities specified in Condition 94(b).

T&C 94

(b) MNR shall produce a new implementation manual to address operational considerations for the activities of harvest, renewal and maintenance with the specific purpose of addressing protection of the physical environment, and to provide direction in relation to harvest layout, configuration and clearcut sizes. For the purposes of these terms and conditions, the working title of this implementation manual is "Environmental Guidelines for Timber Management".

Progress Report

The complex and diverse nature of these concerns, particularly with respect to clearcuts, resulted in MNR's decision to develop the implementation manual in two parts – the Forest Management Guidelines for the Protection of the Physical Environment and the Forest Management Guide for Natural Disturbance Pattern Emulation.

Forest Management Guidelines for the Protection of the Physical Environment (1997)

The Forest Management Guidelines for the Protection of the Physical Environment were prepared in 1997 to help resource managers prevent, minimize or mitigate adverse effects on the physical environment when planning and conducting forest operations. These guidelines are designed to contribute to the maintenance of the health and inherent long-term productivity of forested ecosystems on Crown land in Ontario.

This implementation manual describes mechanisms that help maintain forest site productivity that may be adversely affected by alterations to soil structure, soil displacement, nutrient removals, the loss of productive land and the negative hydrological impacts that can arise from some forest practices in some circumstances. It provides an overview of the major site damage issues confronting forest managers during harvest, renewal and maintenance activities associated with forest management: compaction and rutting, erosion, nutrient loss, loss of productive land, and hydrological impacts. For each of these issues, the implementation manual recommends a number of best management practices.

The Forest Management Guidelines for the Protection of the Physical Environment formalize the requirements for protecting the physical environment and describes objectives to be considered when planning for and implementing forest management activities. Forest managers are able to incorporate the recommendations for protecting site productivity discussed in the guide when developing forest units and silvicultural ground rules in accordance with the FMP Manual. The implementation manual also provides direction for formulating site-specific treatments that incorporate measures to protect forest site productivity.

Science content and background were provided in the development of this implementation manual by a writing team, all of whom had current, relevant knowledge and practical application on conducting forest operations. MNR and forest industry technical staff reviewed the first draft of the document. As well, the draft was posted on the Environmental Registry for public review. This review led to some changes in wording and clarification of direction in the draft guideline.

Training on the use of this implementation manual was provided in three guideline training workshops held in 1997. These sessions provided forest managers with instruction on the application of the Forest Management Guidelines for the Protection of the Physical Environment during forest management planning and plan implementation. The final version was published in September 1998.

Forest Management Guide for Natural Disturbance Pattern Emulation

The Forest Management Guide for Natural Disturbance Pattern Emulation provides direction to forest managers on designing harvest areas to more closely resemble natural disturbances by leaving more standing trees, as individuals and peninsular and insular patches, scattered throughout irregular-shaped harvest areas.

In keeping with T&C 27, this guide explains that "a range of clearcut sizes... should be created to ensure the size class distribution of clearcuts follows that same tendencies [as those created by fire]"(MNR 2001b, Page 20).

The guide provides standards and guidelines relating to configuration and contiguity, and the restrictions on clearcut size. Configuration is described as the relative arrangement of parts, in terms of size, shape and arrangement. Contiguity is described as the state of touching along a boundary, or at a point or being next to or near. This adjacency can be considered temporally, such as years, or spatially, such as metres.

The guide provides direction in the following areas:

- Landscape harvest patterns.
- Percent of planned clearcuts that must be less than 260 ha.
- Separation of planned clearcuts.
- Natural forest disturbance template and forest composition and age class structure.
- Structural legacy: residual stand structure, such as insular and peninsular residual patch retention, individual residual live trees and snags, and downed woody debris.
- Silvicultural considerations.

- Disturbances in areas of concern.
- Fire salvage.

Clearcuts greater than 260 ha are permitted, provided that they are consistent with the FMP Manual and that one or more of the following three conditions are encountered:

- The clearcut(s) is an attempt to 'de-fragment' a previous group of smaller cuts.
- The clearcut(s) is integrated as part of an overall strategy to provide wildlife habitat.
- Public concerns and concerns regarding impacts to other forest users have been addressed to the best of the planning team's ability.

The Forest Management Guide for Natural Disturbance Pattern Emulation states that clearcuts larger than 260 ha must be documented with appropriate rationale in a FMP. The guide includes a standard that requires 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region to be less than 260 hectares in size.

The Forest Management Guide for Natural Disturbance Pattern Emulation provides direction in relation to harvest layout, configuration, contiguity and size. The purpose of this guide is to provide direction for forest management practitioners in the development and implementation of FMPs such that managed forest landscapes will resemble more closely the landscapes recently created naturally by fire. Over time, the application of this guide will create a landscape pattern that appears more natural than one that has been developed with the application of species-specific wildlife habitat guidelines.

Five documents were produced in the development process for this guide. Table 6 summarizes the stages of developed.

Table 6. Stage of Guide Development

Stage of Guide Development	Date	Name of Document
Pre-draft	November 1996	Environmental Guidelines
1st formal document (but not a draft of the guide)	April 1997	Draft Forest Management Guidelines for Emulation of Fire Disturbance Patterns – Analysis Results
1st draft	September 2000	Forest Management Guidelines for Retaining Forest Ecosystem Structure and Function: the Fire Simulation Guidelines
2nd draft	August 2001	Draft Forest Management Guide for Natural Disturbance Pattern Emulation
Final	November 2001	Forest Management Guide for Natural Disturbance Pattern Emulation

A wide range of experts as well as representatives from the general public were involved in preparing the guide. A qualified and diverse writing team, which included representation from the forest industry, the environmental and academic communities and MNR, participated in the development. Since November 1995, three workshops were held and one questionnaire was developed to elicit advice from other MNR staff, forest industry staff and non-government organizations. The Provincial Forest Technical Committee also provided continued guidance in the evolving direction of the guide since November 1996.

In 1999, an environmental non-governmental organization made a request to the Minister of the Environment for the designation of specific forest management activities on the 1999-2019 Temagami FMP to the status of an individual environment assessment by way of a bump-up request. This request was based on concerns regarding the number of clearcuts greater than 260 ha. As part of the denial of the individual environmental assessment in November 1999, the Minister of the Environment required MNR to finalize the Forest Management Guide for Natural Disturbance Pattern Emulation (then called the draft Forest Management Guidelines for Retaining Forest Ecosystem Structure and Function: the Fire Simulation Guidelines).

Two drafts of the guide were posted on the Environmental Registry for public comment, in October 2000 and September 2001, respectively. Members of the public took a keen interest in this document – over 3,000 public comments were received during its production. As was experienced during the EA hearings, public concerns on the size of clearcuts continued. All comments and suggestions were reviewed and, wherever possible, changes made to subsequent versions. The final document was released on November 28, 2001.

The stand level direction will be implemented beginning with the 2003 FMPs. Training for these planning teams occurred in November and December 2001. The entire guide, which includes stand and landscape level guidance, will be implemented for the first time in plans that come into effect in 2004. Training for those planning teams took place in February 2002.

In 1999, MNR's compliance with T&C 27 and 94(b) was the subject of an investigation by the Ministry of the Environment under the *Environmental Bill of Rights*. MNR was found to be in compliance with these terms and conditions.

Synopsis

To meet the requirements of T&C 94(b), MNR developed an implementation manual that was released in two parts. The Forest Management Guidelines for the Protection of the Physical Environment was produced in 1997 to help resource managers prevent, minimize or mitigate adverse effects on the physical environment when planning and conducting forest operations. The Forest Management Guide for Natural Disturbance Pattern Emulation was produced in 2001 and involved a wide range of experts and stakeholders, with considerable public input. This guide provides direction in relation to harvest layout, configuration, contiguity and size, in order that managed forest landscapes will resemble more closely the landscapes recently created naturally by fire.

MNR is making recommendations regarding this term and condition in Section 3.5.2.1 Implementation Manuals Review and Revision and Section 3.5.2.2 Emulating Natural Disturbance Patterns, of the Timber Class EA Review.

Clearcut Harvesting – Planning and Reporting - T&C 27(b)&(c)

Current Requirement

During the EA hearings, many issues were raised about clearcutting, but clearcut size received the most attention. Based on the evidence, the EA Board concluded that "…clearcutting is an acceptable timber management practice, particularly for the boreal forest" (Koven and Martel 1994, Page 159) and that "…clearcuts should be made in a range of sizes to emulate natural disturbances, and that – although extremely large clearcuts would likely be rare for practical reasons - limiting clearcuts strictly to small sizes would make it impossible to regenerate the boreal forest to its natural pattern of large even-aged stands" (Koven and Martel 1994, Page 162).

The EA Board required MNR to implement a restriction on clearcut harvesting requiring a range of clearcuts and to develop implementation manuals and direction for use in planning.

Term and condition 27(b) requires consideration of a range of sizes when planning clearcuts, not to exceed 260 ha. Individual or contiguous clearcuts which exceed 260 ha must be documented in FMPs as exceptions, with sound silvicultural or biological reasons provided. Term and condition 27(c) requires MNR to inventory and monitor clearcuts and exceptions to the maximum size restriction, as well as configuration and contiguity. The results are to be reported in management unit annual reports, the Provincial Annual Reports on Forest Management to the Legislature and Ontario's State of the Forest Report and are considered in this Timber Class EA Review.

T&C 27(b) and (c)

MNR shall implement a restriction on clearcut harvesting requiring a range of sizes of clearcuts not to exceed 260 hectares. MNR shall also develop standards for configuration and contiguity of clearcuts which will ensure that the purpose of this restriction is not frustrated.

- *(b) Silvicultural Ground Rules shall be prepared with the objective of ensuring that clearcuts are planned to a range of sizes and not consistently approach or meet the permitted maximum. Where for sound biological or silvicultural reasons individual or contiguous clearcuts exceed 260 hectares, they shall be recorded in the Plan as an exception to this condition, with reasons provided.*
- *(c) MNR shall inventory and monitor clearcuts and exceptions to the maximum size restriction as well as configuration and contiguity. The results shall be in the Annual Report for the Forest Management Unit, in the Annual Report to the Legislature, in the five-year State of the Forest Report and in the review of the Minister of the Environment and Energy pursuant to Condition 114(a)(v).*

Progress Report

While the EA Board stated that "The scientific evidence on clearcuts supports the view that their should be a range of clearcut sizes in our forest" (Koven and Martel 1994, Page 172), they decided that clearcuts "…normally be planned [in FMPs] in a range of sizes up to 260 ha" (Koven and Martel 1994, Page 173). They accepted that "…some large clearcuts are required and [they] rely on the judgement of foresters to make exceptions above the 260-hectare limit for biological and silvicultural reasons such as salvage operations, overmature stands and wildlife habitat requirements. The rationale for exceeding 260 hectares must be reported in the Plan" (Koven and Martel 1994, Page 173).

Emulating Natural Disturbance Patterns

In addition to the direction in the EA Board's decision the approach to establishing clearcut size follows the *Crown Forest Sustainability Act* principle that forest practices should, within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns (*Crown Forest Sustainability Act* 1994, Section 2(3)(2)). This principle required MNR to develop new knowledge and understanding about the emulation of natural disturbances and landscape patterns. This principle is implemented through the FMP Manual that requires FMPs to demonstrate that the frequency distribution of clearcuts and wildfire sizes shows movement towards natural disturbance patterns (MNR 1996a, Page. A-63).

A number of FMPs prepared since 1994 include objectives to emulate natural disturbance patterns. Efforts to prepare FMPs that provide a range of disturbance sizes have resulted in larger planned clearcuts, with appropriate rationale provided in FMPs.

Clearcut Restrictions, Standards and Definitions

Term and condition 27(c) required MNR to inventory and monitor clearcuts, with emphasis on size. This has been done in accordance with the FMP Manual, which provides direction regarding planning and reporting of clearcuts.

Consistency in measuring clearcut size has proven to be difficult because of challenges in defining a clearcut. Two particular aspects of clearcuts that were of interest to the EA Board were configuration and contiguity. Configuration refers to the relative arrangement of parts, which can be described in terms of size, shape and pattern. For example, when configuring a harvest block, considerations may include the overall size relative to the perimeter, the shape of the harvest boundary (e.g. smooth versus jagged) and the arrangement of harvest blocks across the landscape.

Contiguity refers to the state of touching along a boundary, or at a point or being next to or near. This adjacency can be measured using temporal (e.g., years) or spatial (e.g., metres) measures. For example, when planning clearcuts, contiguity considerations could include ensuring that the new harvest block is not located adjacent to a block harvested less than 20 years ago, or ensuring harvest blocks are 200 metres apart.

The EA Board recognized this problem and in fact stated that perhaps the only area of agreement among the parties at the EA hearings was "…the difficulty of defining exactly what should be considered a clearcut" (Koven and Martel 1994, Page 159).

Several MNR implementation manuals provide information, direction and rationale for establishing clearcut size and patterns under different circumstances. However, before 1999, there was no specific direction to planning teams on how to define and map clearcut size. Planning teams used a variety of techniques and standards for measuring clearcuts, including spatial or temporal adjacency measures.

Given the silvicultural requirements of the tree species in the Boreal Forest Region, the majority of the area is harvested using the clearcut silvicultural system. Key guidelines used in planning timber harvest within the boreal forest, and which provide important information on the provision of wildlife habitat, include: Timber Management Guidelines for the Provision of Moose Habitat; and the Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach. The moose habitat guideline includes direction for moose range management and specific management for values such as aquatic feeding areas. In the northwestern part of the province, in locations where significant woodland caribou populations occur, application of the woodland caribou habitat guidelines takes precedence over moose habitat guidelines for determination of clearcut size. The caribou habitat guidelines suggest one of the means of creating future winter habitat for caribou is through prescribing large disturbance events.

The provision of deer habitat, particularly for winter concentration areas and including shelter and food sources, is a key consideration when planning harvest patterns in the Great Lakes-St. Lawrence Forest Region, per the Forest Management Guidelines for the Provision of White Tailed Deer Habitat. The silvicultural characteristics of tree species in this forest region and the habitat requirements for deer normally result in relatively small harvest blocks. Approximately 25% of the harvested areas are cut using the clearcut silvicultural system, 30% use the shelterwood silvicultural system and the remainder are harvested by the selection silvicultural system.

These three featured species guidelines (moose, caribou and deer) provide direction on and restrict clearcut size for critical habitat areas, while recognizing exceptions to the 260 ha limit for biological or silvicultural reasons, and the provision of a range of sizes.

In addition to producing various habitat guidelines, MNR examined historical fire records and produced the Forest Management Guidelines for the Emulation of Fire Disturbance Patterns Analysis Results. This document contained information on the disturbance area and frequency of fires ranging in sized from 10 to 10,000 hectares. Many planning teams used this analysis in preparing FMPs.

In 1999, MNR released a technical note, Defining A Clearcut, that provided interim direction on how to determine clearcut size. The technical note required forest managers to include all adjacent harvested areas younger than 20 years and separated by less than 200 metres in the determination of clearcut size. Given that this definition includes a spatial (200 m) and temporal (20 years) aspect, it provides a measure of contiguity. Since then, planning teams have been using this approach, beginning with those plans scheduled for approval in the year 2001. Some planning teams were even able to apply this definition for FMPs approved in 2000.

To meet the requirements of T&C 27(a) and 94(b), MNR developed an implementation manual that was released in two parts:

- The Forest Management Guidelines for the Protection of the Physical Environment helps forest managers prevent, minimize, or mitigate adverse effects on the physical environment when planning and conducting forest operations.
- The Forest Management Guide for Natural Disturbance Pattern Emulation that provides direction to forest managers on designing harvest areas to more closely resemble natural disturbances by leaving more standing trees, as individuals and peninsular and insular patches, scattered throughout irregularly shaped harvest areas. The direction provided by the Defining a Clearcut technical note was in effect until the release of this guide in November 2001.

In keeping with T&C 27, the Forest Management Guide for Natural Disturbance Pattern Emulation explains that "a range of clearcut sizes . . . should be created to ensure the size class distribution of clearcuts follows the same tendencies [as those created by fire]" (MNR 2001b, Page 20). Clearcuts greater than 260 ha are permitted, provided that they are consistent with the FMP Manual and that one or more of several conditions are encountered. This guide also contains standards for harvest layout, configuration and contiguity for future planning and reporting purposes.

The Forest Management Guide for Natural Disturbance Pattern Emulation states that clearcuts larger than 260 ha must be documented with appropriate rationale in a FMP. The guide includes a standard that requires 80% of the number of planned clearcuts in the Boreal Forest Region and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region to be less than 260 hectares in size. For more information on this guide, see the progress report for T&C 27(a) and 94(b) Clearcut Harvest – Environmental Guidelines.

The purpose of this guide is to provide direction for forest management practitioners in the development and implementation of FMPs such that managed forest landscapes will resemble more closely the landscapes recently created naturally by fire. Over time, the application of the guide will create a landscape pattern that appears more natural than one that has been developed with the application of species-specific wildlife habitat guides.

Stand level guidance outlined in the Forest Management Guide for Natural Disturbance Pattern Emulation will begin to be applied with FMPs scheduled for approval in 2003. Full application of the guide, for stand level guidance, landscape level guidance and reporting, will begin with FMPs scheduled for approval in 2004. For those FMPs approved before 2004, clearcut size will be mapped and measured for the purposes of reporting in management unit annual reports and reports of past forest operations following the same rules that were applied during the preparation of the associated FMP.

Planning Harvest Patterns

Term and condition 27(b) requires that the silvicultural ground rules shall be prepared with the objective of ensuring that clearcuts are planned to a range of sizes and not consistently approach or meet the permitted maximum. Silvicultural ground rules describe how forest cover will be managed on the management unit. They do not directly influence planning harvest layout, aside from determining whether or not the clearcut silvicultural system is appropriate for a given forest unit.

The geographical selection of harvest areas, which determines the range of size classes, is dealt with through the harvest selection criteria. Accordingly, the MNR has set requirements, through the FMP Manual, for planning a range of harvest sizes. In addition to the requirement to create a harvest pattern similar to that which would be created by fires (i.e., emulate natural disturbance patterns), the FMP Manual included the following requirements to address T&C 27 (b) in FMPs:

1. Harvest selection criteria (Page A-84, lines 17-23) – The FMP is to document consideration of the direction on harvest layout and configuration as provided in the Environmental Guidelines for Forest Management (i.e., Forest Management Guide for Natural Disturbance Pattern Emulation). Since the introduction of the FMP Manual,

clearcuts were planned in a manner consistent with the *Crown Forest Sustainability Act* principle to emulate natural disturbance patterns and landscape patterns.

2. Areas selected for harvest (Page A-85, lines 24-25) – Documentation must be provided of the rationale for clearcut areas which do not represent a range of sizes, or which exceed 260 ha.
3. Harvest prescriptions (Page A-93, lines 6-20 and Page A-95 [figures A-3 and A-4]) – The number of planned clearcut areas by size class, the total area of planned clearcuts in each size class and the maximum and average size of planned clearcuts must be documented in the FMP text. Where for sound biological or silvicultural reasons clearcuts exceed 260 ha, they must be documented in the text as exceptions. In 1999, the Defining a Clearcut technical note provided direction to planning teams on mapping and measuring clearcut size. The Forest Management Guide for Natural Disturbance Pattern Emulation is to provide direction for the classification of planned clearcut areas by size class for FMPs scheduled for approval starting in 2004.
4. Certification (Page A-186, lines 20-23 and Page A-181 [Figure A-6]) – The MNR District Manager must certify that the FMP has been prepared in accordance with the FMP Manual. Exceptions for clearcuts must also be noted on the certification page.

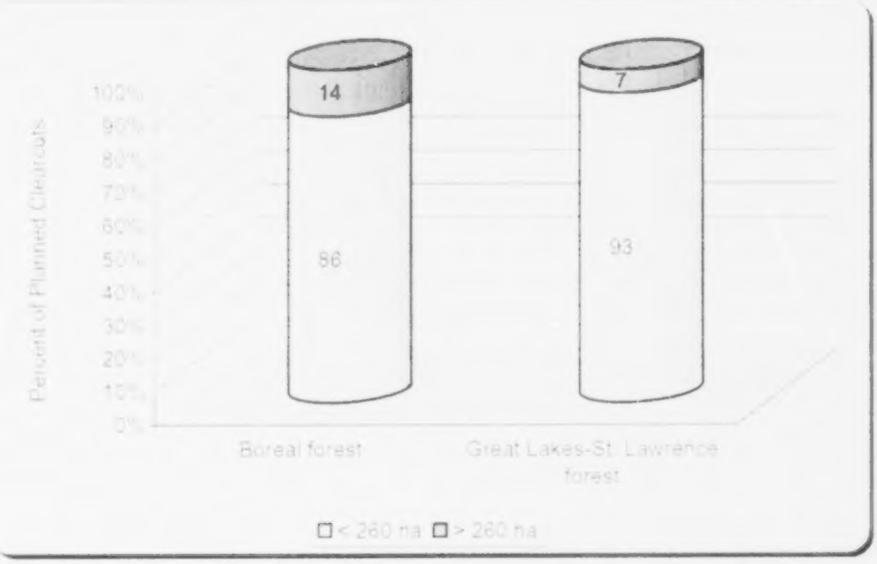
Planned Clearcut Sizes

A review of FMPs approved from 1997 to 2001 found that FMPs documented when and where clearcuts were planned to exceed 260 ha. The review found variability in the standards that were used to map and define clearcut size. Many FMPs accounted for nearby cuts or multi-year cuts. For instance, of the clearcuts documented as greater than 260 ha, 42% considered adjacent harvest areas using a temporal measure of 20 years. Sixty percent considered adjacent harvest areas using a spatial measure. The majority of the spatial measures were 200 m. For the remaining clearcuts documented as greater than 260 ha, adjacent harvest areas were not considered or these considerations were not described in the FMPs. That is, clearcut size was limited to the extent of the area proposed for harvest in the 5-year term of the FMP.

This review examined the number of planned clearcuts in both the Boreal Forest Region and the Great Lakes-St. Lawrence Forest Region which were greater than and less than 260 ha. These results are presented in Figure 5 and show that approximately 86% of the planned clearcuts are less than 260 ha in the boreal forest. In the Great Lakes-St. Lawrence forest, approximately 93% of planned clearcuts are less than 260 ha.

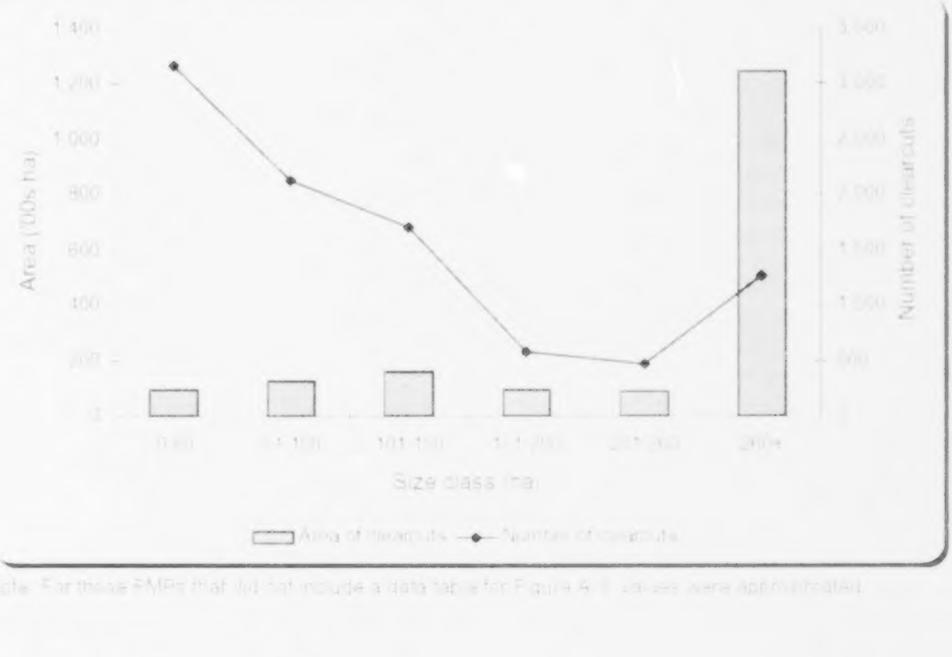
These results are consistent with the standard in the Forest Management Guide for Natural Disturbance Pattern Emulation which requires 80% and 90% of the planned clearcuts to be less than 260 ha in the boreal and Great Lakes-St. Lawrence forests, respectively.

Figure 5. Percent of planned clearcuts greater than and less than 260 ha in the Boreal and Great Lakes-St. Lawrence Forest Regions (1997-2001).



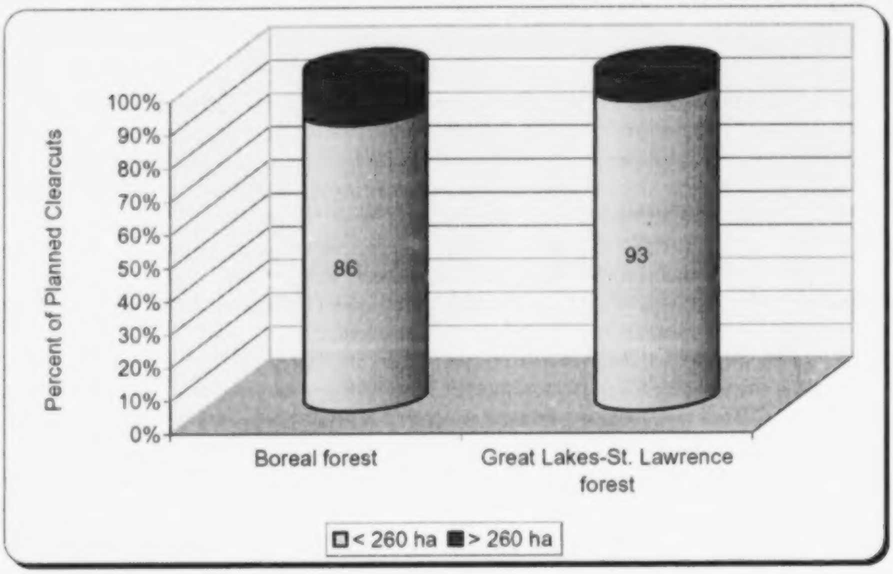
The planned clearcut area and frequency by size class in the Boreal Forest Region and the Great Lakes-St. Lawrence Forest Region have been summarized in Figure 6 and Figure 7 respectively.

Figure 6. Clearcut area and frequency by size class as planned in FMPs in the Boreal Forest Region (1997-2001).



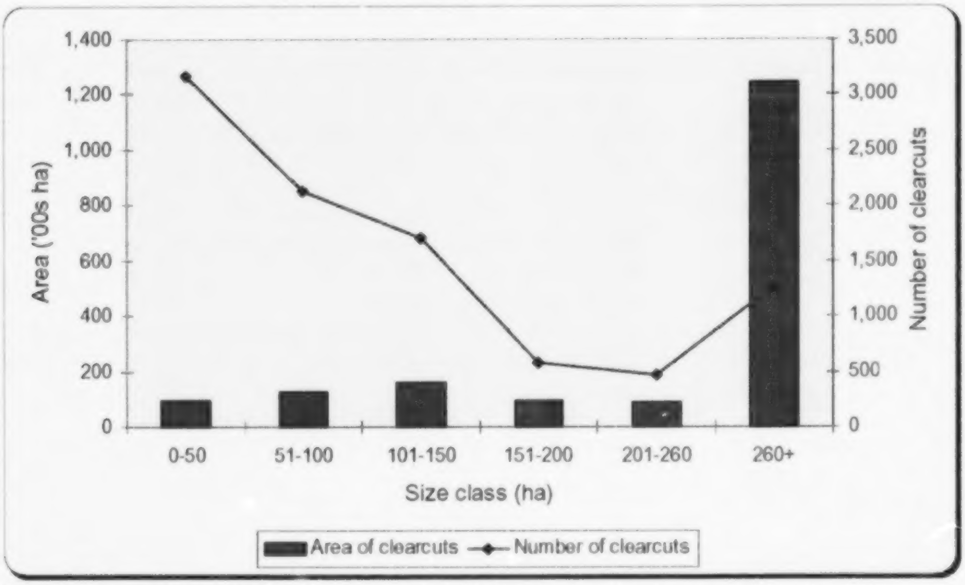
Note: For those FMPs that did not include a data table for Figure A-8, values were approximated.

Figure 5. **Percent of planned clearcuts greater than and less than 260 ha in the Boreal and Great Lakes-St. Lawrence Forest Regions (1997-2001).**



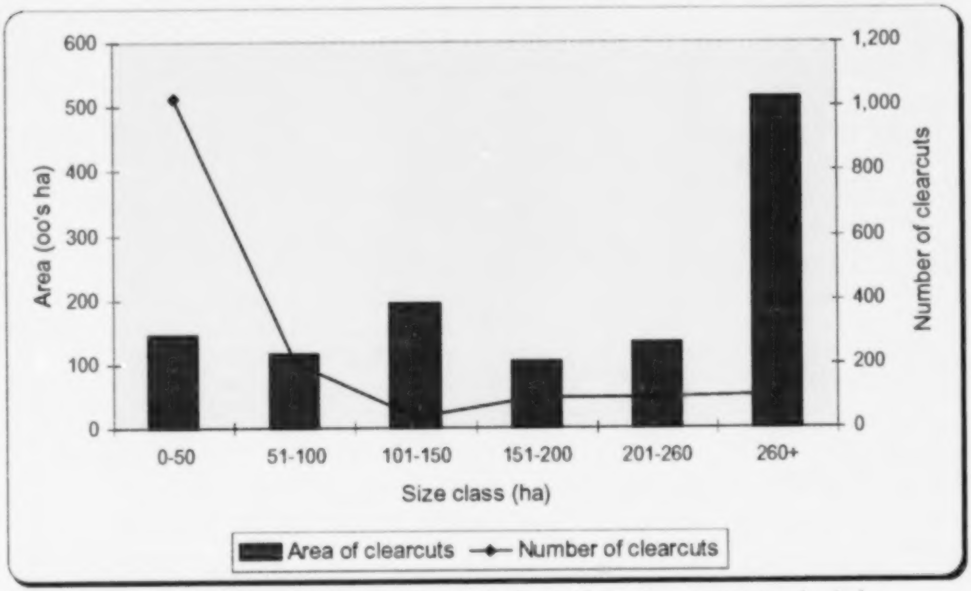
The planned clearcut area and frequency by size class in the Boreal Forest Region and the Great Lakes-St. Lawrence Forest Region have been summarized in Figure 6 and Figure 7, respectively.

Figure 6. **Clearcut area and frequency by size class as planned in FMPs in the Boreal Forest Region (1997-2001).**



Note: For those FMPs that did not include a data table for Figure A-3, values were approximated.

Figure 7. **Clearcut area and frequency by size class as planned in FMPs in the Great Lakes-St. Lawrence Forest (1997-2001).**



Note: For those FMPs that did not include a data table for Figure A-3, values were approximated.

Figures 6 and 7 show that the trend in planned clearcut size and frequency is consistent with natural landscape patterns dominated by wildfire disturbances. These landscape patterns show the majority of disturbances being relatively small in size, with a small number of disturbances accounting for the majority of area disturbed. This is consistent with the *Crown Forest Sustainability Act* principle to emulate natural disturbances and landscape patterns, and the sustainability indicator in the FMP Manual, which requires FMPs to show movement towards emulation of natural disturbance frequency by size class.

Figures 6 and 7 also show that clearcuts larger that 260 ha have been planned. The primary rationale for these clearcuts was to emulate natural disturbances and landscape patterns. In the boreal forest, 66% of the clearcuts documented as greater than 260 ha included a secondary rationale. Of these clearcuts with a secondary rationale, 49% were identified as contributing to wildlife habitat objectives (e.g., to provide for future habitat for woodland caribou or pine marten), 33% were identified to 'de-fragment' a previous group of smaller cuts, and 18% included other rationale (e.g., harvest operations following insect infestation).

Since 1999, most planning teams have been considering adjacent harvest areas when mapping and measuring clearcut size, which has resulted in some clearcuts being documented in large size classes than would have without the adjacency considerations. It should also be noted that the FMP Manual does not specify the size classes to be used for documenting planning clearcuts larger than 260 ha in the FMP. As a result, Figures 6 and 7 have included all clearcuts greater than 260 ha in the same size class.

Reported Clearcut Sizes

Term and condition 27(c) requires MNR to inventory and monitor clearcuts and exceptions to the maximum size restriction, as well as configuration and contiguity. Terms and conditions 79, 82, 84, and their associated appendices (Appendices 18, 20 and 22), describe the requirements to report on the average and maximum clearcut sizes in the management unit annual reports, Provincial Annual Reports on Forest Management to the Legislature and Ontario's State of the Forest Report.

Management Unit Annual Reports

The EA Approval requirement to report on average and maximum clearcut size in management unit annual reports came into effect through the FMP Manual (Page C-11, lines 2-4). According to the phase-in provisions included in Appendix VIII of the FMP Manual, the full requirements for completing the management unit annual reports were to be applied for the November 1997 annual reports (1996/1997 fiscal year). Management units began to include statistics of average and maximum clearcut size in the 1996/1997 annual reports on a limited basis and increased in number thereafter. Therefore, average and maximum clearcut sizes were reported in the 1996/1997, 1997/1998, 1998/1999 and 1999/2000 management unit annual reports.

The way in which clearcut size has been reported in management unit annual reports has varied. This is because the reports were produced before a standardized approach mapping and determining clearcut size was developed. Until 1999, most reports used the annual harvest area to determine and report on maximum and average clearcut size (i.e., definition did not consider adjacent harvest areas). The Defining A Clearcut technical note definition for clearcut size, which considers adjacent harvest areas, was used for some of the 1999/2000 management unit annual reports.

Provincial Annual Reports on Forest Management

The data that were included in the management unit annual reports for average and maximum clearcut size were summarized and included in the Provincial Annual Reports on Forest Management to the Legislature. Each provincial annual report includes harvest areas from the previous year's management unit annual reports. The clearcut size information from the 1996/1997 management unit annual reports was incomplete and therefore did not get included in the 1997/1998 Provincial Annual Report on Forest Management. However, the range of average and maximum clearcut sizes from the 1997/1998 management unit annual reports was reported in the 1998/1999 Provincial Annual Report on Forest Management, summarized by forest region. The 1999/2000 Provincial Annual Report on Forest Management includes a summary of the clearcut sizes reported in the 1998/1999 management unit annual reports.

The 2000/01 Provincial Annual Report on Forest Management, which is currently under preparation, will report on the average and maximum clearcut size from the 1999/00 management unit annual reports.

State of the Forest Report

State of the Forest Report, 2001, includes a summary of the ranges of average and maximum clearcut sizes that were reported in the 1997/1998 and 1998/1999 management unit annual reports, and reported in the 1998/1999 and 1999/2000 Provincial Annual Reports on Forest Management. The following information on average and maximum clearcut size is found in the State of the Forest Report, 2001:

> "Average clearcut sizes reported for the boreal forest ranged from 29 to 479 hectares in 1997/98, based on reports from 29 management units, and from 19 to 444 hectares in

1998/99, based on reports from 43 units. Information from the same management units reported maximum clearcut sizes ranging from 59 to 2,1119 hectares in 1997/1998, and from 54 to 2,924 hectares in 1998/99" (Page 4-85).

"Average clearcut sizes reported for the Great Lakes- St. Lawrence forest ranged from 5 to 61 hectares in 1997/98, based on reports from 13 management units, and from 10 to 87 hectares in 1998/99, also based on 13 management units. Information from the same management units shows maximum clearcut sizes ranging from 5 to 239 hectares in 1997/98, and from 21 to 244 hectares in 1998/99" (Page 4-86).

Although not part of the State of the Forest Report, 2001, below is a summary of the information gathered to-date from the 1999/2000 management unit annual reports. This information will be used in preparing the 2000/2001 Provincial Annual Report on Forest Management:

- Average clearcut sizes reported for the Boreal forest ranged from 24 to 1581 hectares in 1999/00, based on reports from 46 management units. Information from the same management units reported maximum clearcut sizes ranging from 85 to 4966 hectares in 1999/00.
- Average clearcut sizes reported for the Great Lakes-St. Lawrence forest ranged from 5 to 109 hectares in 1999/00, based on reports from 14 management units. Information from the same management units reported maximum clearcut sizes ranging from 15 to 272 hectares in 1999/00.

Caution should be exercised in analyzing the results of the average and maximum clearcut size data, given that the standards used for mapping and measuring clearcut size varied among management units over time. New direction for determining clearcut size, which considers contiguity (i.e., adjacent harvest areas), will provide consistency in future reporting.

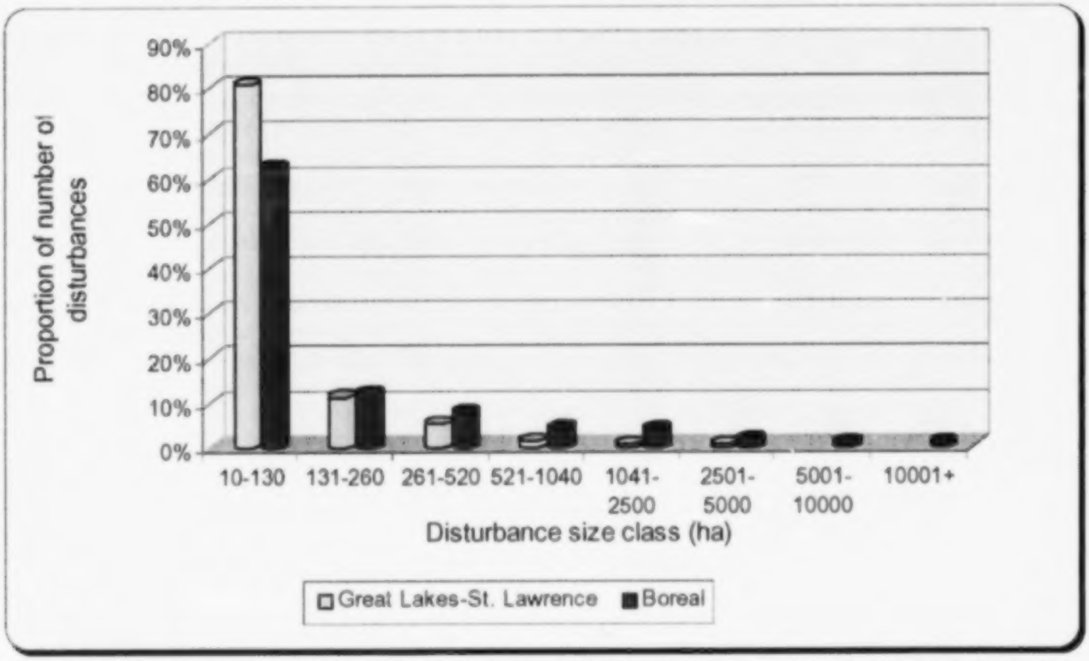
The State of the Forest Report, 2001, included an analysis of the proxy indicator "1.1.3 Frequency distribution of clearcuts and wildfire sizes" (Page 3-13) which includes measures of contiguity. The report states that "The conservation of biological diversity can be addressed at a landscape level through efforts to emulate historical natural disturbance patterns and processes using silvicultural systems that approximate the natural disturbance patterns and processes historically characteristic of the area or forest type.... Therefore in order to conserve biological diversity in its forests, Ontario monitors the frequency distribution of clearcut and wildfire sizes as a component of conserving landscape diversity in its forests" (Page 3-13).

This, indicator is also one of the required indicators of sustainability measured in FMPs. The FMP Manual provides the direction that the "Frequency distribution of clearcut and wildfire disturbance sizes should show movement towards emulating natural disturbance frequency by size class" (Page A-63). This FMP Manual indicator of sustainability requires actual fire and clearcut (i.e., disturbance) information from the previous 20 years. The information is acquired at the start of a plan term as a survey of the current forest condition. A 2001-2021 FMP, for example, would include any disturbances that occurred from 1981 to 2001 in the analysis.

A forecast of the effects of implementing the planned depletions on the frequency distribution of clearcuts and wildfire disturbance sizes is also required in the development of the FMP. This indicator of sustainability will be re-measured in subsequent FMPs and compared to previous forecasts, as part of an adaptive approach to forest management. In this way, the frequency distribution of clearcuts and wildfire disturbance sizes is monitored over time.

This indicator provides a good indication of disturbance size, and addresses contiguity given that the FMPs included in the analysis used the Defining A Clearcut technical note definition when determining clearcut size. Figure 4 shows the frequency distribution of clearcuts and wildfire disturbance sizes, as documented in the approved 2000 and 2001 FMPs, and the draft 2002 FMPs.

Figure 8. Frequency distribution of number of disturbances (both harvest and wildfire) by size class in the Boreal and Great Lakes-St. Lawrence Forests.



Note: This information represents the mean of the frequency distribution of clearcut and wildfire disturbance sizes by management unit and size class as documented in the approved 2000 and 2001 FMPs and draft 2002 FMPs. This information covers a 20-year disturbance history.

Figure 8 is prepared with data from approximately 70% of the management units in the Area of the Undertaking. The results show that in the Boreal Forest Region, almost 75% of documented disturbances were less than 260 hectares, while in the Great Lakes-St. Lawrence Forest Region 92% were less than 260 hectares.

Synopsis

Term and condition 27 required MNR to implement a restriction on clearcut harvesting, ensuring that clearcuts are planned to a range of sizes. Where clearcuts were to exceed 260 ha, sound silvicultural or biological rationale was to be provided in the FMP. MNR was also required to inventory and monitor clearcut size, contiguity and configuration, and to report the results through management unit and provincial reports.

The *Crown Forest Sustainability Act* includes the principle that forest practices should, within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns.

MNR has met the requirements of T&C 27 (b) and (c), and the *Crown Forest Sustainability Act* through direction provided in a number of documents. Principal among these is the FMP Manual, the technical note Defining A Clearcut, and most recently the Forest Management Guide for Natural Disturbance Pattern Emulation.

MNR has reviewed the range of planned clearcut sizes document in FMPs approved from 1997-2001. This review found that approximately 86% of the planned clearcuts are less than 260 hectares in the boreal forest. In the Great Lakes-St. Lawrence forest, approximately 93% of planned clearcuts are less than 260 hectares.

MNR has also reported on the average and maximum clearcut sizes in management unit annual reports, the Provincial Annual Reports on Forest Management and the State of the Forest Report, 2001. Twenty-year clearcut and wildfire disturbance data, reported in the State of the Forest Report, 2001, show the majority of disturbances in the boreal and Great Lakes-St. Lawrence forests (75% and 92% respectively), were less than 260 hectares in size.

The Forest Management Guide for Natural Disturbance Pattern Emulation, released in November 2001, includes a standard requiring 80% and 90% of the number of planned clearcuts to be less than 260 hectares in the boreal and Great Lakes-St. Lawrence forests, respectively. This guide also provides standards for harvest layout, configuration and contiguity for future planning and reporting purposes.

MNR is making recommendations regarding this term and condition in Section 3.1.8 Planning of Harvest, Renewal and Maintenance Operations, 3.1.11 Management Unit Annual Reporting, 3.3.1 Provincial Annual Report on Forest Management, 3.3.2 State of the Forest Report, 3.5.2.2 Emulating Natural Disturbance Patterns, 3.7.2. 5-Year EA Report and Monitoring of this EA Approval, of the Timber Class EA Review.

Criteria for Water Crossing Removal - T&C 52(d)&(e)

Current Requirement

The EA Board directed MNR and others to develop appropriate criteria for the identification of water crossings that require removal on abandoned roads to avoid negative environmental effects (e.g., impairment of water quality).

T&C 52

(e) MNR shall form a committee of technical experts with the MOEE and the Industry in order to develop the biological, engineering, water quality and safety criteria referred to in Condition 52(d). These criteria shall be developed within two years of this approval."

(d) Where it has been determined that the primary or secondary road which traverses the Area of Concern is likely to be abandoned, if there is a water crossing in the Area of Concern there shall be a determination as to whether the water crossing is likely to require removal. That determination shall be based on biological, engineering, water quality and safety criteria. Relevant information to be considered at the time of issuance of construction approvals and work permits shall be provided in the Timber Management Plan."

Progress Report

To comply with T&C 52(e), MNR, with assistance from the Ministry of Environment and Energy and the forest industry, established a team of experts to examine the issue of road abandonment and water crossings. A first version of these biological, engineering, water quality and safety criteria was developed for the spring of 1996.

A second version was developed in the spring of 1997 that included a set of twelve criteria for the four categories of criteria (i.e. biological, engineering, water quality and safety), and provided a detailed explanation of how the criteria would be used in forest management planning. This version was circulated for review by technical staff within the two ministries as well as by various Ontario's forest products companies. In addition, a public notice was posted on the Environmental Registry in June 1997 to inform the public of the document and to invite comments.

Comments from the review and the Environmental Registry were considered by MNR, and a revised version, Criteria for Water Crossing Removal on Abandoned Roads, was released in 1997. This document provides direction on how to use the criteria the experts developed to determine whether a water crossing is likely to require removal and how to use the information during forest management planning.

Training on the planning of forest access roads in FMPs, using the criteria described in the 1997 document, has been provided through MNR's annual forest management planning training courses since the fall of 1997.

Synopsis

The Criteria for Water Crossing Removal on Abandoned Roads, developed by a team of technical experts from the MNR, the Ministry of Environment and Energy and the forest industry, is a valuable planning and operational tool and meets the requirements of T&C 52(e).

MNR is making recommendations regarding this term and condition in Section 3.5.2.3, Criteria for Water Crossing Removals, of the Timber Class EA Review.

Negotiations with Aboriginal peoples - T&C 77

Current Requirement

Term and condition 77 requires MNR District Managers to conduct negotiations at the local level on a number of matters with Aboriginal peoples to identify and implement ways of achieving more equal participation by Aboriginal peoples in the benefits provided through forest management. Term and condition 77 also requires reporting on progress in the Provincial Annual Reports on Forest Management to the Legislature.

> ***T&C 77***
>
> *During the term of this approval, MNR district managers shall conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through timber management planning. These negotiations will include but are not limited to the following matters:*
>
> *(a) Providing job opportunities and income associated with bush and mill operations in the vicinity of Aboriginal communities.*
> *(b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities.*
> *(c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist.*
> *(d) Providing timber licences to Aboriginal people where unalienated Crown timber exists close to reserves.*
> *(e) Development of programs to provide jobs, training and income for Aboriginal people in timber management operations through joint projects with the Department of Indian and Northern Affairs.*
> *(f) Other forest resources that may be affected by timber management or which can be addressed in the timber management planning process as provided for in Condition 23(c).*
> *(g) MNR shall report on the progress of these on-going negotiations district-by-district in the Annual Report on Timber Management that will be submitted to the Legislature (Condition 82 and Appendix 20).*

Progress Report

Implementation Guidelines

In January 1996 MNR provided draft 'Implementation Guidelines for T&C 77' (MNR 1996c) to MNR Districts. The purpose of these guidelines was to provide District Managers with a consistent framework for T&C 77 implementation that built on existing initiatives and facilitated development of new initiatives and to provide Aboriginal communities and the forest industry with information MNR District Managers would use in the implementation of T&C 77. During initial implementation there were some inconsistencies in early reporting.

A revised draft guideline entitle Condition 77: Revised Interpretation and Guidelines (MNR 1999f) was released in September 1999. It included an interpretation of T&C 77, implementation advice, and direction on reporting.

In practice, MNR District Managers have conducted negotiations at the local level by way of meeting, discussing, sharing information, and facilitating cooperation and dialogue with Aboriginal people and others.

The Ministry recognizes each Aboriginal community is different and has tailored its negotiations accordingly. In addition to those Aboriginal communities that are situated within a management unit, MNR District Managers have also held negotiations with Aboriginal communities adjacent to a management unit. The Ministry considers the implementation of T&C 77 to be an on-going exercise.

Implementation Activities

Term and condition 77 described certain matters that could be the subject of negotiations between MNR District Managers and Aboriginal peoples. These matters could include job opportunities in the forest products industry, supplying wood to wood processing facilities, facilitating Aboriginal negotiations with existing licensees, providing timber licenses to Aboriginal people, working with the federal government regarding Aboriginal programs related to forestry, and discussions on other forest resources.

Since the EA Board decision in 1994, Aboriginal communities have progressively benefited from increasing economic development opportunities associated with forestry.

Jobs and income for Aboriginal communities have increased through a wide range of business opportunities realized throughout the Area of the Undertaking. Millions of dollars of silvicultural contracts, joint ventures and mutual agreements are arranged annually with Aboriginal people by the forest industry and by MNR. These include:

- silviculture contracts for precommercial thinning, manual tending, tree planting, nursery stock production, pruning, cone collection,
- data collection contracts for collection of values information, native values mapping, wood measurement, stocking assessment, forest inventories,
- wood harvesting contracts for sawlogs, veneer, and pulpwood,
- contracts for forest fire fighting, road construction and maintenance, wood transportation, forest planning services, nuisance animal management and tree marking,
- direct employment in mill operations and the supervision and layout of forest operations.

Progress has also been realized by increasing the amount of timber made available to Aboriginal people through contracts and licences. Initially, contracts and licences were small; however, as First Nations developed their capacity in forest operations and management, their sizes increased.

At the provincial level, in 1986, only about 100,000 cubic metres of wood were licenced to Aboriginal people. By the year 2000, over 1.5 million cubic metres of wood within the Area of the Undertaking were allocated to, cut by, contracted to, or offered to Aboriginal people and businesses. Approximately one million cubic metres was harvested, accounting for 4 to 5% of the wood harvested in Ontario.

The federal and provincial governments, as well as the forest industry, have invested considerable effort in developing and sponsoring participation in training programs for Aboriginal people. MNR for example has worked with the Canadian Forestry Service in implementing its Aboriginal Forestry Program. MNR has also worked closely with community colleges in their delivery of programs such as the Native Forestry Technician and Native Resource Technician programs. MNR has offered training and employment to Aboriginal people through internship programs and Co-op programs for resource professionals and technicians (e.g., foresters, biologists, Conservation Officers).

The forest industry has also worked extensively with federal and provincial agencies such as Human Resource Development Canada, FedNor, the Ministry of Training Colleges and Universities, and the Northern Ontario Heritage Fund to deliver employment and pre-employment training programs. These programs have generally been directed toward employment opportunities in mill and woodland operations.

Progress has also been made in providing opportunities associated with other forest resources and in work that directly supports the development of FMPs. For example, collecting cones for seed extraction occurred in several districts.

Aboriginal people undertook a variety of data collection operations throughout the Area of the Undertaking. These included regeneration assessments, tree planting assessments, forest inventories, volume table sampling, values identification, values mapping and the preparation of Background Report on the Identification of Native Values.

Ongoing Implementation Efforts

MNR's efforts in implementing T&C 77 have not stopped with the 1999/2000 reporting period. MNR and the forest industry will continue to work with Aboriginal communities to provide additional economic development opportunities in forestry. Some recent initiatives that will be reported in subsequent annual reports include the following:

- Trus Joist Weyerhaeuser is completing a $250 million laminated strand lumber mill in Kenora that promises to provide direct economic opportunities to area residents, many of whom are Aboriginal peoples. The project is a result of MNR's competitive process for the utilization of surplus Crown timber in Northwestern Ontario. The company, with support from the federal and provincial governments, is providing an extensive pre-employment training program to approximately 125 Aboriginal people to prepare them for employment in mill and woodlands operation.
- Bowater Pulp and Paper Canada Inc. has recently announced plans to construct a multi-million dollar sawmill and planer mill on the Fort William Indian Reserve in Thunder Bay. The federal government has provided financial support and MNR has facilitated the project by approving Bowater's business plan to realign the wood supply on their Sustainable Forestry Licences.

MNR's timber licensing process has often been the subject of discussions with Aboriginal businesses and communities. These discussions have usually focused on two aspects of timber licensing, specifically the conversion of Crown and company management units to Sustainable Forest Licences and the issuance of new timber licences in conjunction with surplus Crown timber.

In 1996, MNR began a process of issuing Sustainable Forest Licences on many former Crown management units. This was not a process of reallocating Crown timber, rather it was a process that invited existing licensees and wood commitment holders to participate in discussions to create a new management entity to take on the forest management responsibilities of a Sustainable Forest Licensee. All existing timber licensees on the management unit, including Aboriginal licensees, were invited to participate in the process. In several instances, Aboriginal licensees became directly involved in the new management entity, while in most instances they continued as overlapping timber licensees.

MNR has had limited opportunity to issue new timber supply agreements and forest resource licences in association with surplus Crown timber. This surplus Crown timber is normally allocated through a competitive process under the terms of the *Crown Forest Sustainability Act*. However, MNR brought forward Order-in-Council 993/95 to enable the Minister to grant forest resource licences and enter into supply agreements to provide economic opportunities for Aboriginal people without following the competitive process that would otherwise be required under the *Crown Forest Sustainability Act*. This Order-in-Council is another example of MNR's efforts under T&C 77.

Regardless of the process used to allocate surplus Crown timber, opportunities for Aboriginal people are addressed as part of the process in awarding timber supply agreements and forest resource licences. For example, in the recent competitive process used to award surplus hardwood in Northeastern and Northwestern Ontario, business plans submitted by all applicants were required to describe the economic opportunities they would provide for Aboriginal people. MNR then judged these business plans based, in part, on the plan's contribution toward Aboriginal economic opportunities.

MNR continues to seek ways to expand its implementation of T&C 77. One example of this is a joint study that is being conducted by MNR and the Union of Ontario Indians, to assess the implementation of T&C 77 through community case studies. The study will examine implementation efforts that achieved results and those that did not, with the intent of learning from and sharing successes. This study was proposed by a working group of the Anishnabek, Ontario Resource Management Council, that is a forum established to foster mutual understanding and dialogue.

Reporting and District Implementation Summaries

Term and condition 77 also required reporting on the progress of the on-going negotiations on a district-by-district basis in the Provincial Annual Report on Timber Management that is submitted to the Legislature.

Starting with the 1995/1996 Provincial Annual Report on Forest Management, a summary, by district, of local negotiations with Aboriginal people, has been included in Chapter 9 of each report. MNR has also reported on the implementation of T&C 77 in the State of the Forest Report, 2001.

There is a continuing high level of interest in the progress being made in implementing T&C 77. For that reason, MNR has provided in this progress report on the EA Approval, a summary of the information that was first contained in the Provincial Annual Reports. The information contained in the summary has been grouped under four broad categories, and listed by year.

The first category, **Relationships and Participation**, describes the involvement of Aboriginal people in the forest management planning process including, membership in advisory committees, planning teams, Local Citizen Committees and in forestry in general.

The second category, **Contracts**, describes a wide range of contracting opportunities that have resulted in increased jobs and income for Aboriginal people. Contracting has occurred in forest access, harvest, renewal and maintenance operations.

The third category, **Licences**, describes a variety of harvesting licences that have been made available to Aboriginal people, companies and communities.

The fourth category, **Training, Recruitment and Employment**, describes operational training that has been conducted, participation in formal courses, formal education opportunities provided, Co-op programs and direct employment.

District Summaries – Term and Condition 77

Algonquin Park **Management Units including:** Algonquin Park Forest	
First Nations or other Aboriginal communities situated within the Park: Algonquin Park is part of the traditional territory of several Algonquin communities surrounding the provincial park including Golden Lake, Mattawa, Bancroft, Whitney, Sharbot Lake and Ottawa. Portions of the park are also included in the Robinson-Huron and Williams Treaty areas.	
	Relationships and Participation
96/97	• In the context of Algonquin land claim negotiations involving the provincial and federal governments, discussions have occurred on forest related economic opportunities.
97/98	• Discussions continue with the Algonquins on forest related economic opportunities as part of the ongoing land claim negotiations.
98/99	• Discussions continue with the Algonquins on forest-related economic opportunities as part of the ongoing land claim negotiations. Several dozen community meetings were held.
99/00	• Negotiations occurred with Algonquin communities regarding the 2000-2005 forest management plan. Discussions included protection of values identified in the completed Native Background Information Reports. • An increased Algonquin presence is anticipated with the allocation of three seats on the Forest Management Planning Team, and participation of the Algonquins of Pikwakanagan and the Mattawa Algonquins in the preparation of future Native Background Information Reports for the Algonquin Park Forest.
	Contracts
96/97	• The Algonquin Forestry Authority has been and continues to enter into contractual arrangements for road maintenance and silvicultural work with individual Algonquins and with community economic development corporations.
97/98	• The Algonquin Forestry Authority has been and continues to enter into contractual arrangements for road maintenance and silvicultural work with individual Algonquins and with community economic development corporations.
98/99	• The Algonquin Forestry Authority has been and continues to enter into contractual arrangements for road maintenance and silvicultural work with individual Algonquins and with community economic development corporations. • Opoortunities have been identified to supply tree seedlings from the Corry Lake Tree Nursery, an enterprise of Makwa Economic Development Corporation.
99/00	• The Algonquin Forestry Authority has been and continues to enter into contractual arrangements for road maintenance and silviculture work with individual Algonquins and with community economic development corporations. • Opportunities have been identified to supply tree seedlings from the Corry Lake Tree Nursery, an enterprise of Makwa Economic Development Corporation. • Through a signed Memorandum of Understanding, opportunities have been identified for upcoming contracts which include 300 hectares of pole work and stand improvements, road construction and maintenance, site preparation, tree marking, and data collection.
	Licenses
99/00	• Forest resource allocations of 21,000 cubic metres annually have been identified for First Nation utilization over the next five years.

	Training, Recruitment and Employment
95/96	• Members of the Algonquins of Golden Lake First Nation were employed as operators with an overlapping licence in the district. • Local sawmills that received timber from Algonquin Park employed first Nation members. • The Algonquin Forest Authority has an educational arrangement with Sault College to employ and train Golden Lake students in a work-sharing program.
96/97	• Several Algonquin community members are employed in sawmill and woodland operations that harvest timber from Algonquin Park. • The Algonquin Forest Authority and Algonquin Park also completed an employment and educational arrangement with several Algonquin students through the Sault College Aboriginal Resource Technician program.
97/98	• Several Algonquin community members are employed in sawmill and woodland operations that harvest timber from Algonquin Park.
98/99	• Several Algonquin community members are employed in sawmill and woodland operations that harvest timber from Algonquin Park.
99/00	• A signed Memorandum of Understanding will undoubtedly generate many new employment opportunities for the Native community in upcoming years.

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Bancroft District **Management Units including:** Bancroft, Minden, Mazinaw	
First Nations or other Aboriginal communities situated within the District: There are no First Nation communities in the Bancroft District. However the Algonquin First Nation has satellite communities around the Bancroft, Sharbot Lake, and Whitney areas.	
	Relationships and Participation
95/96	• The Algonquins of Golden Lake First Nation took the lead in the forest-management planning process. Sustainable Forest Licence negotiations with the forest industry were in the preliminary stages. However, the forest industry was advised that any expression of interest in a Sustainable Forest Licence should include involvement from the First Nation.
96/97	• Much of Bancroft District lies within the traditional territory of the Algonquin peoples. Three groups of Algonquin peoples are resident within the District; those at Whitney, Bancroft and at Sharbot Lake. During 1996/97, these groups were not participants in forest management activities on Crown Lands within Bancroft District, although a significant number of people of Aboriginal heritage are amongst the workforce employed by the forest industry in two of the mills that lie within the Bancroft District.
97/98	• Metis communities in the area are participating in forest management activities. • The Algonquins of Golden Lake and the Algonquins of Baptiste Lake requested forestry reports to identify and assess opportunities. • The District initiated discussions with the Algonquins of Whitney, Kawartha Nishnabe and Curve Lake First Nations to identify opportunities to become involved in the Sustainable Forest Licence process. • Negotiations between forestry partners and Algonquin communities were facilitated through the Sustainable Forest Licence negotiation process. • The Algonquin's of Whitney became a full member with a local forest company that is a partner in the Sustainable Forest Licence negotiations.
98/99	• The district initiated discussions with the Algonquins of Whitney, Baptiste Lake Algonquins, and the Golden Lake and Curve Lake First Nations to identify opportunities to become involved. • Fuelwood harvesting areas were designated to Curve Lake First Nation through the Bancroft-Minden Sustainable Forest Licence document. • There are two First Nation representatives on the Local Citizens Committee; one each on the Bancroft-Minden and Mazinaw-Lanark Management Units. • The Algonquins of Golden Lake submitted a proposal for a training initiative that was supported by a local forest company.
99/00	• The district initiated discussions with several First Nation communities in an effort to identify potential employment and educational opportunities and to become involved in the forest management process. • The Algonquins of Whitney harvested timber on five Forest Resource Licences with Murray Bros. • Golden Lake First Nation and the Algonquins of Sharbot Lake facilitated the preparation of local Native Background Information Reports. • There is currently a First Nation representative on the Local Citizens Committee for the Mazinaw and Lanark Management Units.
	Contracts
97/98	• Aboriginal people in the area have provided tree-marking services.

98/99	• An estimated 15 tree-marking contracts were awarded to companies who are affiliated with First Nation communities or have Aboriginal personnel in their work force. • A contract was awarded to Makwa Economic Development Corporation, an Aboriginal-affiliated company, to produce tree seedlings for the Bancroft-Minden Sustainable Forest Licence in the future.
99/00	• Three stand improvement contracts and two tree marking and boundary line contracts totaling 596 hectares have been issued.
	Licences
97/98	• The Algonquins of Golden Lake First Nation has an annual wood harvest allocation of 100 hectares. A harvesting contract with a second local forest company provided access to 741 hectares of harvest area. An agreement with a third forest company provided an additional 120 hectares of harvest area. • Two thousand cubic metres of wood are allocated to Aboriginal people in the Bancroft District.
98/99	• The Algonquins of Whitney is a member of the independent licensees in Bancroft-Minden and hold a supply agreement to harvest 100 hectares per year that provides an estimated five full time job opportunities. • Two forestry companies harvesting timber under Forest Resource Licences employed two Aboriginal people.
99/00	• The Algonquins of Whitney are members of independent licensees in the Bancroft-Minden Sustainable Forest Licence and have had a supply agreement to harvest 100 hectares per year that provides an estimated five full-time job opportunities.
	Training, Recruitment and Employment
97/98	• Approximately 10 First Nation members are employed in the forest sector. • Training in careful logging practices, road construction and forest operations compliance are provided to the Algonquin's of Whitney as a member of the Bancroft Forestry company.
98/99	• Two Forest Resource Licence licenses provided job opportunities.
99/00	• The total reported Aboriginal forest-related workforce in this district has been estimated at 14 individuals. • The Algonquins of Golden Lake submitted a proposal for training which is still in process and was supported by a local forest company.

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Chapleau District **Management Units including:** J. E. Martel Forest, Pineland Forest, Superior Forest, Upper Spanish Forest	
First Nations or other Aboriginal communities situated within the District: The four First Nations in the Chapleau District are the Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibway First Nation, and the Missinabie Cree First Nation. As well, Michipicoten First Nation has two unoccupied land bases within the Superior Forest.	
	Relationships and Participation
95/96	• Discussions took place with Brunswick House, Chapleau Cree, and Missanabie First Nations. All three communities expressed an interest in possible forestry opportunities. • There were preliminary discussions about road construction possibilities. The First Nations had to acquire the necessary equipment. MNR committed to making surplus equipment available.
96/97	• Aboriginal communities were invited to participate in the preparation of a Native background information report. The opportunity for a separate Native consultation process was provided and one First Nation participated in the process. • Interest expressed in participation in the joint development of a training centre. • Some members of Aboriginal communities have either established forest businesses or are considering establishing them to conduct harvesting, silvicultural activities, road construction and maintenance. Forest companies continue to discuss forest management opportunities and negotiate access to economic development opportunities. • Eco-tourism initiatives are in the early development stages.
97/98	• Brunswick House First Nation has very positive working relations with a local forest company. The First Nation has identified information on where their members could provide a skilled labour force and equipment to work for the company. The local company has hired equipment and harvest contractors from Brunswick House. • A local forest company contracts its geographic information system and some specialty forest management tasks to the Cree Tech Inc., a company owned by a member of Chapleau Cree First Nation. • North Shore Tribal Council and a Chapleau-based company discussed a transfer of fibre harvested by the North Shore Tribal Council. The Council acquired an overlapping licence on the Mississaugi Management Unit.
98/99	• Chapleau District hired a Native Resource Technician, who is a First Nation member, to directly liaise with the First Nations, forest industry, and MNR. • Brunswick House First Nation has been involved in partnership discussions regarding harvesting on Crown Land with a local Sustainable Forest Licence holder and MNR. Preliminary negotiations are taking place between the Sustainable Forest Licence holder and the First Nation to identify the First Nation's capacity to harvest mixedwoods. • Missinabie Cree are involved in ongoing negotiations for a reserve on the Superior Forest Management Unit. The Sustainable Forest Licence holder has recognized the community's historical interest in the area and has agreed to discuss access to future economic development opportunities.
99/00	• The Sustainable Forest Licence holder in the area has recognized Missinabie Cree First Nation's historical interest in the area, has sponsored a documentary, and has agreed to discuss access to future economic development opportunities.

	Contracts
97/98	• The company has entered into negotiations with a group of forest technicians and members of the First nation to pursue silvicultural opportunities. • The company has identified thinning, cone collection and forest sampling opportunities for consideration by first nations.
98/99	• Chapleau Cree First Nation was advised of forest maintenance, renewal, and silvicultural contract opportunities, e.g., site preparation, roadside slash pile burning, and road construction. The First Nation requested and received a tender package on slash pile burning for their consideration. • A general contracting company operated by First Nation members was under contract to supply gravel for road construction/maintenance, excavation work at the mill site, and winter sanding services to a local forest company. • Chapleau Ojibway First Nation was advised of forest maintenance, renewal, and silvicultural contract opportunities, e.g., site preparation, roadside slash pile burning, and road construction. • A local forest company employs two First Nation members on a full time basis in road construction and maintenance. • It is estimated that seven community members are employed in the local sawmill and planer operations.
99/00	• Several First Nations were advised of a slash-pile-burning contract; however, no bid was made. • A trucking company operated by a First Nation member has contracts with a local forest company's main log hauling contractor. • Conifer/oriented strand board logs were purchased from a First Nation within the district.
	Licences
95/96	• Green Forest Lumber had annual harvest contracts with Brunswick House First Nation.
97/98	• Chapleau Ojibway First Nation and a local company signed an agreement to have a portion of their privately owned Native land harvested and regenerated.
99/00	• No allocations or forest resource licences were issued to First Nations within the district in 1999/00.
	Training, Recruitment and Employment
95/96	MNR sits as an ex-officio partner in the Oji-Cree Training Centre.
97/98	• A harvesting contractor working for the company has hired band construction equipment and provided employment opportunities. • At least one member of the First Nation is employed at the local company sawmill. • The company hired six Aboriginal employees and the harvesting contractor working for the company hired thirteen Aboriginal employees.
98/99	• A trucking company operated by a First Nation member had contracts with a local forest company's main log haul contractor.
99/00	• A local forest company employs two First Nation members on a full-time basis in road construction and maintenance. It is estimated that seven community members are employed in the local sawmill and planer operations. • There is also a full-time Native Resource Technician employed within the district.

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Cochrane District **Management Units including:** Cochrane, Driftwood Forest, Iroquois Falls Forest, Moose River, Smooth Rock Falls Forest	
First Nations or other Aboriginal communities situated within the District: The seven First Nations in the Cochrane District are Attawapiskat, Fort Albany, Fort Severn, Kashechewan, Moose Cree, New Post, and Weenusk. Only one, New Post, falls within the AOU. Moose Cree's traditional territory stretches south into the AOU. Wahgoshig First Nation also has overlapping traditional territory in the Cochrane District.	
	Relationships and Participation
95/96	• Communications occurred regularly with the Moose Cree and New Post First Nations to discuss the development of sustained economic opportunities. There was less frequent communication between the Wahgoshig First Nation and MNR's Cochrane district office, as the First Nation is located in MNR's Kirkland Lake district. • Several discussions took place between MNR and the local forest industry to encourage the discussion of opportunities with Moose Cree and New Post First Nations. A few meetings took place and discussions focused on volume, training, and wholesaling of products. Abitibi-Price also had several meetings with the First Nations with the intent of getting them involved within its unit.
96/97	• The District includes Moose Factory and Mocreebec in negotiations on T&C#77. As well, Wahgoshig First Nation's traditional territories stretch north from Kirkland Lake District into Cochrane District and the First Nation is active in forest management discussions within the District. • Native values' mapping was contracted to a First Nation under the Forest Management Planning process. • A band member was identified to participate on the Local Citizens Committee and on a regional technical committee. • Moose Cree and New Post First Nations each signed separate letters of intent with a forest company. The letters of intent confirmed a desire by the parties to: negotiate a harvesting agreement, co-operate in the development of a business plan, define harvesting areas and a training program, and to develop roles and responsibilities for a First Nation liaison officer to work with industry and Aboriginal communities in all areas of forest operations.
97/98	• A dispute between an Aboriginal trapper and the company over road amendments, needs to be resolved prior to pursuing access to forest management opportunities. The company has identified harvesting and road building opportunities that will be available to Aboriginal people once the dispute is resolved. Training opportunities will be discussed under the letter of intent.
99/00	• Negotiations are underway with three forestry companies, MNR, and the New Post, Moose Cree, and Wahgoshig First Nations regarding the signing of a co-operative Sustainable Forest Licence within the district. • MNR, New Post First Nation, Wahgoshig First Nation, Tembec Industries Inc, and Abitibi-Consolidated Inc. have all signed documents relating to the pursuit of future forest management opportunities, initiatives, and partnerships.
	Contracts
97/98	• The parties are discussing a range of opportunities including harvesting, road building and silviculture.
98/99	• Wahgoshig First Nation has overlapping traditional territory in the Cochrane District and is involved in discussions on access to silvicultural and harvesting opportunities. Pre- commercial thinning contract opportunities and harvesting

	opportunities have been presented to the First Nation.
99/00	• A pre-commercial thinning contract for 80 hectares was issued to the Wahgoshig First Nation, which provided temporary employment for nine persons. • New Post First Nation harvested 22,000 cubic metres of wood from the Iroquois Falls Forest under a contract provided by Abitibi-Consolidated Inc. and the Company has extended an offer to New Post First Nation to harvest an additional 54,200 cubic metres in 2000/01.
	Licences
95/96	• Abitibi allocated a harvesting block for New Post First Nation and committed to another block. • Wahgoshig First Nation also harvested a block on Abitibi's unit.
96/97	• Approximately 22,000 cubic metres of timber was provided to First Nations through overlapping licences to harvest both conifer and hardwood.
97/98	• New Post First Nation has contracts to cut a total of 80,000 cubic metres in two management units. The community has a third party overlapping licence on the Iroquois Fall Forest Management unit to supply 13,000 cubic meters of hardwood. • The community was also offered an opportunity to harvest 10,000 cubic metres on the Cochrane Management Unit and 5,000 cubic metres north of the community of Cochrane
98/99	• Moose Cree First Nation harvested 45,000 cubic metres of wood off the Moose River Management Unit. • New Post First Nation was offered harvesting opportunities but continued to negotiate for higher allocations and have yet to agree on a final allocation. New Post First Nation, under other contractual arrangements, harvested 23,957 cubic metres of wood.
99/00	• New Post First Nation was offered the opportunity to harvest 110,000 cubic metres of poplar over the five-year term spanning 1998 to 2003. Subsequent offers of 45,000 and 20,000 cubic metres of softwood were made to the New Post First Nation during 1999/00. An additional offer of 35,000 cubic metres has been made for the winter of 2000/01. These offers have not yet acted upon at the time of this report.
	Training, Recruitment and Employment
95/96	• Malette discussed with Moose Cree First Nation a contract for bush operations and competitive bidding for road construction. • Abitibi worked with both New Post and Wahgoshig First Nations in logging and hauling techniques. • A student from Wahgoshig First Nation worked in woodland activities with Abitibi, while completing forest technician training. • A forest company and Northern College cosponsored heavy equipment training for 12 members of a First Nation. • A company sponsored a Native technician through Sault College. • Supervisory training was provided to two band members on two management units. • Two Aboriginal people were trainees in bush operations.
97/98	• A local company and Northern College co-sponsored heavy equipment training for 10-12 members of the New Post First Nation. • Two forest companies are sponsoring three Aboriginal trainees.
98/99	• Employment opportunities in the local mill were discussed. • An MNR employee was dedicated to work with the community to complete Native

	Values mapping for the district. • The Town of Cochrane and the Township of Glackmeyer formed a partnership with the First Nation to carry out feasibility studies for a finger joint processing plant. • A local forest company sponsored a community member to attend the Native Resource Technician program at Sault College. • Financial support provided by the MNR assisted the community to complete a Native Background Information Report for the Iroquois Falls Forest. Offers were made to the community to participate in training opportunities.
99/00	• Three members of the New Post First Nation were employed with two separate companies as field technicians in woodlands operations and another individual was hired to work in the mill in Cochrane. • Summer employment opportunities were extended to five high school students and three individuals from New Post First Nation who were enrolled in the Aboriginal Resource Technician Program at Sault College. An individual from this program also works in a co-op program with Tembec Industries Inc., spending two days a week during the semester with Tembec staff. • Several other employment offers were extended without success. • Abitibi-Consolidated Inc. provided 12 potential tree-planting employment opportunities for individuals from New Post First Nation. • Norboard Inc. has trained individuals in supervising harvesting operations as part of their ISO certification. • In all, an estimated 33 First Nations people are directly employed in the forestry sector within the Cochrane District.

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Dryden District: Management Units including: Dryden, Wabigoon Forest, English River Forest	
First Nations or other Aboriginal communities situated within the District: Eagle Lake and Wabigoon.	
	Relationships and Participation
95/96	• Extensive consultation occurred between the Dryden Tribal Council and Avenor around the Dryden mill expansion and the Sustainable Forest Licence negotiations on the Wabigoon Management Unit. The Council comprised members from Eagle Lake and Wabigoon First Nations (Wabigoon Lake Ojibway Nation) communities. The forest industry and the Tribal Council agreed to hire a liaison person to deal with all aspects of forest planning relating to First Nations communities • MNR facilitated meetings relative to proposals from the Wabigoon Non-Status Metis Association and the individual Aboriginal peoples regarding opportunities in timber management planning. • An opportunity to harvest black ash with the Wabigoon Metis Association was explored.
96/97	• Dedicated wood allocations were identified through the forest management planning process. Over 35,000 cubic metres were allocated to Aboriginal companies. Additional allocations are being considered.
97/98	• Noopimiing Anokeewin, a company affiliated with Wabigoon Lake Ojibway Nation, has opted not to join the Sustainable Forest Licence but continue to harvest on the Dryden Forest. • Eagle Lake First Nation has opted not to join the Sustainable Forest Licence but continue to harvest on the Dryden forest • Lac Seul First Nation and a local company have discussed harvesting opportunities but to date, no harvesting contracts have been arranged
98/99	• The Sustainable Forest Licence for the Dryden Forest has been finalized, an additional five percent of the planned harvest has been set aside for a concurrent Aboriginal harvest opportunity through a request for proposal.
99/00	• Many of the First Nations were invited to participate in both the Native Consultation Program and the preparation of Native Background Information Reports or in the identification of local Native forest values. Discussions with Aboriginal communities in the Dryden District are at an advanced stage. The local Ontario Metis Aboriginal Association has been included in the standard forest management planning consultation process following a meeting with the MNR in September of 1999.
	Contracts
95/96	• On the Dryden Forest, there were three Metis logging contractors harvesting approximately 3,000 cubic metres annually. On the Wabigoon Forest management unit, both Eagle Lake First Nation and Noopimiing Anokeewin had overlapping Forest Resource Licences to harvest approximately 10,000 cubic metres for 1995/96. Avenor provided additional wood to Noopimiing Anokeewin in excess of 25,000 cubic metres for 1995/96. Additional opportunities were also provided to Eagle Lake First Nation.
97/98	• Noopimiing Anokeewin harvested 10,000 cubic metres in the Dryden District and a contract was provided to harvest 25,000 cubic metres in the Wabigoon Forest. Actual wood harvested was 33,817 cubic metres in the Wabigoon forest. It is estimated that 20 person years of employment were provided to community

	members. • Noopimiing Anokeemin had a thinning contract that provided employment for 6 community members for a 6-month period. The value of contracts issued to the community is estimated at $102,000. • Eagle Lake First Nation harvested 4,500 cubic metres in the Dryden forest and was under contract to harvest 12,000 cubic metres in the Wabigoon forest. Seasonal employment of 8 months per year is provided for 10 to 12 community members. • A thinning contract went to Eagle Lake First Nation providing employment for 6 community members for a 6-month period. The value of contracts issued to the community is estimated at $257,000. • Lac Seul First Nation obtained a thinning contract that provided employment for 9 community members for a 6-month period. The value of contracts issued to the community is estimated at $19,000.
98/99	• Noopimiing Anokeemin had a pre-commercial thinning to thin 500 hectares, which provided employment for eight Aboriginal people for five months.
99/00	• Eagle Lake First Nation harvested 13,591 cubic metres of wood from the Dryden Forest and was also contracted for a total of 41,500 cubic metres of wood from the Wabigoon Forest This operation provided seasonal employment for 10 to 12 Aboriginal people for eight months. • At the same time, Eagle Lake First Nation delivered an additional 1,694 cubic metres of wood from reserve land, giving a total harvest of 25,432 cubic metres for 1999/00, an increase of 17,074 cubic metres from the previous year. • Weyerhaeuser provided contract opportunities for pre-commercial thinning operations to Wabigoon, Eagle Lake, and Lac Seul First Nations, with Lac Seul accepting a contract to thin 46 hectares providing seasonal employment for four people.
	Licenses
95/96	• On the Dryden Management Unit, the Eagle Lake First Nation, through Eagle Lake Logging, completed a five-year licence to harvest 24,400 cubic metres. Wabigoon First Nation, through its company Noopimiing Anokeewin, had an FRL. Noopimiing's 2,400 cubic metre average annual allocation was allowed to expand to 5,600 cubic metres in 1995/96.
98/99	• The Eagle Lake First Nation harvested 8,358 cubic metres of wood in 1998/99 on the Wabigoon Forest, which provided seasonal employment for 10 to12 Aboriginal people for eight months. • Noopimiing Anokeewin Inc. harvested 50,739 cubic metres of wood on the Wabigoon Forest in 1998/99 that provided full-time employment to an estimated 20 Aboriginal people. In addition, Noopimiing Anokeewin Inc. harvested 3,963 cubic metres on the Dryden Forest.

99/00	• In February of 2000, the Aboriginal Peoples of Wabigoon (Wabigoon Metis and Non-Status Indian Association) was awarded a harvest opportunity, which covers approximately five percent of the planned annual harvest area of the Dryden Forest. • Noopimiing Anokeewin Inc. harvested 60,029 cubic metres of wood on the Wabigoon Forest in 1999/00. Full-time employment was provided to an estimated 20 Aboriginal people Concurrently, the total harvest by Noopimiing Anokeewin Inc. on the Dryden Forest was 12,364 cubic metres. The total annual harvest by Noopimiing Anokeewin Inc. increased from 54,702 cubic metres in 1998/99 to 72,393 in 1999/00 within the Dryden District. • The Aboriginal Peoples of Wabigoon (Wabiggon Metis and Non-Status Indian Association) also harvested a total of 43,423 cubic metres of wood from the Dryden Forest.
	Training, Recruitment and Employment
95/96	• Many members of the Eagle Lake and Wabigoon First Nations were employed by Avenor, both in the mill and the woodlands operations. • MNR supported the education and training of an individual in the Native Technician Distance Education Program. Avenor initiated a summer forestry training program where one of its staff worked with Aboriginals in all aspects of forestry.
96/97	• It's estimated that over forty Aboriginal people work for the forest industry in the District. • Aboriginal businesses entered into pre-commercial thinning operations that provide seasonal employment to approximately twenty First Nation members. • A graduate of Sault College Native Resource Technician program was hired. As well two Native co-op high school students were sponsored.
97/98	• The MNR employed one Aboriginal person for a nine-month contract and sponsored two Native co-op high school students.
99/00	• In addition, Weyerhaeuser has discussed the possibility of purchasing seedlings in the future from a greenhouse that the Wabigoon Ojibway Nation community is building. • Both the MNR and the Dryden Forest Management Company have sponsored students in the Aboriginal Resource Technician program at Sault College.

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Fort Frances District **Management Units including:** Seine River Forest, Sapawe Forest, Manitou Forest, Fort Frances Forest, Flanders Forest	
First Nations or other Aboriginal communities situated within the District: Seine River, Lac La Croix, Naicatchewenin, Rainy River, Big Grassy, Couchiching, and Stanjikoming First Nations communities are in Fort Frances district.	
	Relationships and Participation
95/96	• The Seine River First Nation did not wish to explore these opportunities until a larger issue of local co-management was settled. There was a tentative 25,000 cubic metres allocation reserved for any Seine River First Nation member wanting to harvest timber. • Discussions took place between MNR and the Seine River First Nation, the Lac La Croix First Nation, and the Naicatchewenin First Nation • There were discussions with the Lac La Croix First Nation that included Stone Consolidated, the anticipated Sustainable Forest Licence holder on the unit. Discussions with the band included forest management planning, forest operations and potential economic opportunities. These discussions were an extension of the Agreement of Co-existence between the Crown and the Lac La Croix First Nation. The band was invited to participate as a party in the ongoing Sustainable Forest Licence negotiations on the unit. • The Naicatchewenin First Nation was negotiating an agreement with Stone-Consolidated and other licensees regarding the Loonhaunt Study Area.
96/97	• Ongoing discussions between First Nations and forest industry include the signing of a Memorandum of Understanding with a First Nation that sets the framework for involvement in forest management within a Sustainable Forest Licence
97/98	• A local forest company has a strategic Sustainable Forest Licence partnership with Naicatchewenin Development Corporation. An agreement between the parties outlines the framework for a business to business relationship.
99/00	• Three Native persons sit on Local Citizens Committees within the district.
	Contracts
95/96	• Planting contracts were offered to Rainy River, Stanjikoming, and Seine River First Nations. Stone Consolidated had contracts with the Seine River First Nation to conduct thinning operations, employing approximately five people for three months. A fire crew from the Lac La Croix First Nation was employed by MNR for a number of years.
96/97	• a First Nation having gained significant experience in road construction held large road construction contracts with MNR for two years and is now establishing a Development Corporation to assume heavy equipment contracts. • Approximately $300,000. in forest management contracts were awarded to Aboriginal businesses
97/98	• Naicatchewenin has a tree-planting contract estimated at $58,000. • Rainy River First Nation has a tree-planting contract estimated at $8,000.
98/99	• Stanjikoming First Nation has a tree-planting contract estimated at $14,000. • First Nations and independent Aboriginal contractors were given a $100,000 contract for thinning, a substantial tree planting contract, a 76-hectare mechanical site preparation contract and a 121-hectare spacing contract. • A road maintenance contract with an estimated value of $250,000 was issued to an Aboriginal business.

99/00	• In addition, contracts were issued for hauling of 38,053 cubic metres, site preparation of 58 hectares, planting a total of over 139,000 trees and pre-commercial thinning of 80 hectares. • Additional contracts for the Highrock Forest included three thinning contracts covering 306 hectares, a $250,000 road maintenance contract, and hauling contract for 30,000 cubic metres of wood
	Licenses
95/96	• A Timber Supply Agreement was negotiated with Manitou Lumber located on Rainy River First Nation Reserve #11.
96/97	• Over 200,000 cubic metres of wood were designated for Aboriginal communities.
97/98	• Naicatchewenin was allocated 22,720 cubic metres of wood. • Rainy River First Nation, through an affiliated company Manitou Lumber, has a commitment for 19,916 cubic metres of wood. • Couchiching First Nation, through an affiliated company TEA logging, was allocated 5,240 cubic metres of wood. • A local Metis member was allocated 2,109 cubic metres of wood. • Big Grassy First Nation, through an affiliated company AMC Contracting, was allocated 23,928 cubic metres of wood.
98/99	• The independent Aboriginal contractors and First Nations were allocated 186,452 cubic metres of wood for harvest in 1998/99.
99/00	• Within the Fort Frances Forest and Flanders Forest management units, a total of seven separate harvesting licences were issued to six different First Nations, with a combined harvest allocation of 166,880 cubic metres. • Within the Highrock Forest, harvest allocations totaled 97,500 cubic metres of wood.
	Training, Recruitment and Employment
95/96	• Naicatchewenin, Big Grassy, Couchiching, Rainy River, and Seine River First Nations were all involved in harvesting Crown forests. There were approximately 25 people employed through these harvesting activities. • The Naicatchewenin First Nation was involved in archaeological studies within the Loonhaunt Study Area. Government assistance helped in constructing and equipping a training centre at Lac La Croix as part of an Agreement of Co-existence. One member of the Lac La Croix community completed the Native Forest Technician Program with the assistance of MNR staff and was working out of Lac La Croix.
96/97	• Financial assistance was provided to hire an Aboriginal fire crew. One First Nation member trained as a forest technician and worked on planning and Sustainable Forest Licence transaction issues. • Under a formal agreement a training centre was constructed and equipped. • It is estimated that over 150 Aboriginal people were employed in the forest industry in the District
97/98	• Manitou Lumber employed 15 community members in its mill operation and one member in its harvesting operation. • United Native Friendship Centre was allocated a one-time allocation of 5,118 cubic metres of wood as a training opportunity. Training opportunities have been successfully pursued with the centre.
98/99	• It is estimated that over 60 Aboriginal people work in mill and bush operations in the district.
99/00	• The MNR provided $15,000 worth of infrastructure funding for the Naicatchewenin

	Development Corporation, which is a First Nation forestry business actively involved with Abitibi-Consolidated Inc. During the past year, a Human Resource Committee and an Economic Development Committee were established in order to facilitate further negotiations between stakeholders. • Employment was estimated for the Fort Frances and Flanders Forests at about 41 First Nation people. • Employment was estimated for the Highrock Forest at between 75 and 85 First Nations people, plus an additional 80 to 90 First Nations mill workers. • Employment in the Sapawe Forest was approximated at an additional 25 First Nations people. In total, the employment numbers reported in the district this year have more than tripled over last year. As well, the total district-wide wood allocations this year surpassed those from last year by almost 80,000 cubic metres. • Three harvesting training opportunities were licenced to the Stanjikoming and Lac La Croix First Nations by Abitibi-Consolidated Inc., in an effort to develop the necessary skills to effectively carry out future contract prospects.

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Hearst District **Management Units including:** Gordon Cosens Forest, Hearst Forest, Kapuskasing	
First Nations or other Aboriginal communities situated within the District: Constance Lake	
	Relationships and Participation
99/00	• Constance Lake First Nation has a representative on the Hearst Local Citizens Committee and a representative on the Hearst Forest forest management planning team. • Plans are underway for a collaborative effort to build a finger-jointing plant.
	Contracts
95/96	• The Hearst Sustainable Forest Licence awarded to Constance Lake First Nation a planting contract for 300,000 seedlings. This contract was to be increased as the First Nation demonstrated its ability to handle large tree plantings. • MNR arranged for a contract forest fire crew from Constance Lake First Nation.
99/00	• Constance Lake First Nation were awarded a tree-planting contract, worth approximately $75,000 for half a million seedlings during the summer of 1999.
	Licences
95/96	• Constance Lake First Nation was allocated 5,000 cords of conifer annually for economic development. They were discussing with MNR the possibility of adding an allocation of hardwood as well.
97/98	• Constance Lake First Nation through an affiliate Mammamatawa Inc. was allocated 12,035 cubic metres of wood in addition to harvesting on other licence areas. The First Nation is negotiating a settlement for a wood supply exchange of 75,000 cubic metres of wood.
98/99	• Constance Lake First Nation, through an affiliate (Mammamatawa Inc.), was allocated 12,035 cubic metres of wood, in addition to harvesting on other licence areas. They are negotiating a settlement for a wood supply exchange of 75,000 cubic metres of wood.
99/00	• Constance Lake First Nation has been issued an allocation of 29,000 cubic metres of wood on the Hearst Forest and 76,751 cubic metres on the Kapuskasing Management Unit. Mammamatawa Inc., a First Nation harvesting company run and staffed by members of the Constance Lake First Nation, had additional contracts for roughly 64,000 cubic metres of wood in 1999/00.
	Training, Recruitment and Employment
95/96	• Constance Lake First Nation was involved in discussions with MNR and the Hearst Sustainable Forest Licence regarding job opportunities for its members.
99/00	• Mammamatawa Inc. employs approximately 14 workers full- and part-time and the workforce at the local sawmill is comprised of almost 50 percent First Nations (approximately 65 individuals). This puts the number of Aboriginals working in the forest industry within the District at around 80 individuals. • The Sustainable Forest Licence holder and MNR jointly supported First Nation forestry summer students in the district, and First Nation graduates from the district are eligible for the Hearst Forest Management First Nations Scholarship. • Funding was provided to the Constance Lake and Hornepayne First Nations for a First Nation Values Research Technician and Native Values research on the Hearst Forest. • Native Values documentation funding was also provided to New Post First Nation on the Gordon Cosens Forest.

Kemptville District **Management Units including: Lanark**	
First Nations or other Aboriginal communities situated within the District: The Algonquins of Ottawa and Sharbot Lake and the Mohawk Council of Ahkwesahsne	
	Relationships and Participation
98/99	• The Mohawk Council of Ahkwesahsne and the Algonquins of Ottawa and Sharbot Lake hold regular discussions on forest management opportunities. A member representing the Algonquin communities participates on the Local Citizens Committee. • The Algonquin communities are preparing a Native Background Information Report and Native Values map as part of the forest management planning process.
99/00	• The amalgamated Mazinaw-Lanark SFL has been the primary liaison for negotiations and discussions. A member representing the Algonquin communities participates on the Local Citizens Committee. • There was some assistance by Algonquins during road layout for one harvest location but there were no contracts, licences, or allocations designated in this district during 1999/00. • The Algonquin communities prepared a Native Background Information Report as part of the forest management planning process and funding has been provided to the Ahkwesahsne to produce a manual on management of black ash. • In an effort to discuss forest management planning and native values within the district, a "Forestry Day" was held by the MNR, the SFL holder, and native community members.

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Kenora District **Management Units including:** Kenora, Patricia Forest	
First Nations or other Aboriginal communities situated within the District: There are several First Nations communities located within the Kenora District: Wabaseemoong, Grassy Narrows, Wabauskang, Whitefish Bay, Shoal Lake #39 (Iskutewisakagun First Nation), Shoal Lake #40, Dalles, Northwest Angle #33, and Northwest Angle #37, and Big Island/Big Grassy First Nations.	
	Relationships and Participation
95/96	• All First Nations communities had meetings with MNR regarding opportunities such as harvesting, training, access, and marketing. • Stone Consolidated Ltd. And Tolko Industries Ltd. had discussions with several of the First Nations communities. These discussions centred on licences, volumes, job creation, and training. • Islington Band Logging was a fully participating member on the forest management planning team
96/97	• Forest industry representatives have discussed forestry opportunities with several of the First Nation communities. These discussions centered on licences, volumes, job creation, and training. A company representative facilitates communications with the First Nations to develop a strategy to achieve economic development and employment benefits.
	Contracts
95/96	• The First Nations communities in Kenora district were involved in stand tending, tree planting, road construction and maintenance, protection, information collection, inventory, and thinning. • Attempts were made to link First Nations to provincial bidders on large contracts to facilitate First Nations entering the provincial bidding system
96/97	• Contracts to Aboriginal business included planting 47,210 trees, and a road right of way clearing totaling over $50,000. The community was under contract to plant 70 million trees. • Mitigonaabee Resource Management was under contract to thin 150 hectares of jackpine that provided 15 part time jobs. • Dalles First Nation was under contract to thin jackpine plantations that provided 5 part time jobs.
98/99	• Funding arrangements and contracts totaling $22,000 were issued to this First Nation for various projects, including nuisance beaver removal, road maintenance, and youth lifestyle training. • Aga-ma-ki-mi-sa-bai Tree Nursery supplied 97,560 container stock for planting on the Kenora Management Unit. A private contractor provided 84 person days of employment to First Nation members on a pre-commercial thinning contract. • Whitefish Bay First Nation had a contract to plant 21,600 seedlings.
99/00	• Abitibi-Consolidated Inc. offered the Grassy Narrows First Nation a joint venture opportunity to undertake a three-year, one million dollar pre-commercial thinning project.
	Licenses
95/96	• The Wabaseemoong First Nation held a Forest Resource Licence that provided employment for approximately 12 people. • Grassy Narrows also held a Forest Resource Licence that provided employment for three to four band members.

	• Wabauskang had Forest Resource Licences issued on Stone Consolidated limits and provided employment for five individuals. • Shoal Lake #39, through an overlapping licence, harvested timber year round and provided jobs for three.
96/97	• Two First Nations obtained licences for 4000 cords of wood. Three First Nations have access to timber licences.
97/98	• Shoal lake #39 First Nation holds a licence for a wood allocation of 1,790 cubic metres. It is estimated that 3 full time jobs will be created. The community was licenced for timber clearing on a commercial aggregate site to harvest 2,345 cubic metres of wood with an estimated 3 full time jobs being created. • Wabaseemoong First Nation has a licence for a wood allocation of 8,522 cubic metres. It is estimated that 6 full time jobs will be created. • Wabauskang First Nation, through an affiliate Mikinaak logging and Petiquan Logging has a wood allocation of 1550 cubic metres of wood. The community employs an estimated 11 members. • Grassy Narrows First Nation, through an affiliate K&Q Logging has a wood allocation of 13,300 cubic metres. The community employs approximately 45 members.
98/99	• Grassy Narrows First Nation, through an affiliate (K&Q Logging), has a wood allocation of 11,500 cubic metres, which employs between five and eight seasonal workers. • Shoal Lake #39 First Nation holds a license for a wood allocation of 2,407 cubic metres. It is estimated that a half a person year of employment was created. • Wabaseemoong First Nation has a license for a wood allocation of 7,221 cubic metres. It is estimated that three full time jobs were created. • Wabauskang First Nation, through affiliates (Mikinaak Logging and Petiquan Logging), had a wood allocation of 2,300 cubic metres of wood. It is estimated that three community members were employed in the forest sector.
99/00	• Grassy Narrows First Nation, through an affiliate (K&Q Logging), was issued two overlapping one-year Forest Resource Licences. The total volume of wood cut on these licences was 8,077 cubic metres.
	Training, Recruitment and Employment
95/96	• Dalles First Nation operated its own sawmill. • Kenora district sponsored the Aboriginal Resource Technician Program. MNR was involved in providing training to Mitigonaabe Forestry Resources Management Inc., a Treaty #3 group that provides integrated forest resource management to Treaty #3 First Nations.
96/97	• Wood allocations of approximately 15,000 cubic metres created fifteen jobs • Financial assistance was provided to First nation company to assist in establishing office space. • A joint project, between MNR and a First Nation, was established to collect oral history.
99/00	• Abitibi Consolidated did provide $37,000 worth of training and culvert maintenance funding to the Grassy Narrows First Nation. • Abitibi Consolidated Inc. and MNR also supported student work/study placements within the district. • Total MNR funding was valued at $14,800 for 1999/00. Estimates of direct forest-related First Nation employment within the district totaled 9-16 individuals

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Kirkland Lake District **Management Units including:**	
First Nations or other Aboriginal communities situated within the District: Iroquois Falls South, Timiskaming Forest (Elk Lake, Timiskaming, Watabeag), Wahgoshig First Nation, Beaverhouse Aboriginal Community, Matachewan First Nation, Temagami First Nation, Mattagami First Nation	
	Relationships and Participation
95/96	• Wahgoshig First Nation was active in negotiations with the local forest industry and MNR. • MNR provided opportunities for Band members to view clear cuts and plantations in the district.
97/98	• MNR, Forest Industry and Matachewan First Nation had numerous meetings on economic opportunities and direction these should focus on (e.g. silviculture)
98/99	• Wahgoshig First Nation, MNR and local forest company discussed economic development and access to forest management opportunities. The First Nation is interested in timber allocations. • A contract for information collection, values identification and mapping were completed by a member of the First Nation. • Timiskaming Forest Alliance Inc. and Wahgoshig First Nation sign a Memorandum of Agreement covering capacity and relationship building.
99/00	• Wahgoshig First Nation and Tembec Industries Inc. have signed a Memorandum of Understanding with regard to establishing future business relationships. • MNR had discussions with Matachewan and Wahgoshig First Nations to explore opportunities for harvesting Crown timber on private lands in the District. • Matachewan First Nation participated as a member of the Local Citizens Committee for Timiskaming Forest.
	Contracts
95/96	• The Wahgoshig First Nation pursued silvicultural activities and its members appeared interested in expanding these activities.
96/97	• A silvicultural contract valued at $25,000 was awarded to a First Nation.
97/98	• MNR contracted with a Wahgoshig and Matachewan First Nation member for information collection, values identification and mapping. • Wagoshig First Nation received $114,000 in forest management contracts.
98/99	• Matachewan First Nation received $104,900 in contracts to complete silvicultural work. • Wahgoshig First Nation had a $67,900 contract to complete silvicultural work.
99/00	• The Matachewan First Nation was issued contracts to plant 247,243 trees at a cost of $31,400 and to carry out pre-commercial thinning on 150 hectares at a cost of $60,000. • The Wahgoshig First Nation provided skidding support for a small forest operation and was also issued contracts to plant 200,540 trees at a cost of $25,496 and pre-commercially thin 100 hectares at a cost of $40,000.
	Licences
95/96	• A Forest Resource Licence was issued to the Wahgoshig First Nation and it negotiated an arrangement with a local logging contractor.
96/97	• A First Nation was active in negotiations with the local forest industry and MNR and was issued a timber licence for 7160 cubic metres of wood in 1997/98.
97/98	• Wahgoshig First Nation was offered a 200-hectare block to harvest.

	• A local forest company contracted with the first nation to hire forestry equipment and crews. Early discussion between the Wahgoshig First Nation and forest companies focused on opportunities in silviculture with the objective of developing increasing contract sizes as a record of successes are documented. These successes will eventually lead to opportunities in harvest contracts. • Local forest companies have entered into and successfully completed mechanical site preparation and pre-commercial thinning contracts with the Wahgoshig First Nation. The community successfully completed a 130-hectare pre-commercial thinning contract.
	Training, Recruitment and Employment
95/96	• MNR was active in the Native Forestry Technician Program. • Two members of Wahgoshig First Nation were employed by MNR as Forestry Technicians for the summer season.
96/97	• MNR was active in the Native Forestry Technician Program. • Seven members of Wahgoshig First Nation were employed in bush and mill operations.
97/98	• It is estimated that seven aboriginal people work in mill and bush operations.
98/99	• At least one member of the Wahgoshig First Nation works for the forest industry in the district.
99/00	• A Native Resource Technician was sponsored by MNR and forest industry at Sault College and a summer experience program position was offered to a member of the Matchewan First Nation.

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Nipigon District **Management Units including:** Auden Forest, part of Black Sturgeon Forest, Kenogami Forest, Lake Nipigon Forest, Nakina North Forest, Ogoki Forest, Pic River Ojibway Forest	
First Nations or other Aboriginal communities situated within the District: The 15 First Nations located in the Nipigon District are Aroland, Eabametoong, Ginoogaming, Kasabonika Lake, Lake Nipigon Ojibway, Landsdowne House, Long Lake #58, Marten Falls, Nibinamik, Ojibways of the Pic River, Pays Plat, Red Rock, Rocky Bay, Sand Point, and Webequie First Nations.	
	Relationships and Participation
95/96	• Discussions at varying levels occurred with all First Nation's communities within the district. • Sustainable Forest Licence negotiations occurred within this district and included the appropriate First Nations. • As a condition of its licence, Long Lake Forest Products must work co-operatively with the Crown to provide opportunities for the Eabametoong and Marten Falls First Nations. The company was to negotiate overlapping agreements, singly or in partnership, for areas that were to be harvested under the terms of a Forest Resource Licence on the Ogoki management unit. The company also had a similar condition with the Aroland First Nation for the Nakina North Management Unit.
96/97	• First Nations participated in the forest management planning process as members of the planning team. In some cases Aboriginal communities declined to participate. • Aboriginal-operated businesses are licensees on a Sustainable Forest Licence. The companies negotiated operating principles including continuation of their licenses; participation in all phases of forest management planning and reporting; opportunities to increase share of harvesting; first right of refusal to carry out forest renewal work based on cost competitiveness; and the forest management unit would be renamed The Pic River Ojibway Forest. • In seven Management Units discussions with First Nations included the review of potential business, employment, planning, harvesting, silvicultural and licensing opportunities. • Council representatives participate in the Forest Management Planning process and Native value information collection. • In some instances there is ongoing liaison with forestry consulting firms retained by Aboriginal communities.
97/98	• Ojibways of Pic River First Nation, through an affiliate Pic River Development Corporation, is at an advanced stage of discussions. The community developed and signed a business plan for participation in the Sustainable Forest Licence. • Aroland First Nation discussed potential business, employment, planning and licensing opportunities. The First Nation was invited to participate as a member of the forest management planning team. The community is pursuing overlapping agreements in two Management Units. • Eabametoong First Nation is discussing potential business, employment, planning and licensing opportunities. The community is pursuing overlapping agreements in two Management Units. • Marten Falls First Nation is discussing potential business, employment, planning and licensing opportunities. The community is pursuing overlapping agreements in two Management Units.

	• Ojibways of the Pic River First Nation, through an affiliate (Pic River Development Corporation), is at an advanced stage of negotiations for an overlapping Forest Resource Licence. The community developed and signed a business plan for participation in the Sustainable Forest Licence.
98/99	• Aroland First Nation is discussing potential business, employment, planning, and licencing opportunities. • Eabametoong First Nation is discussing potential business, employment, planning and licensing opportunities. The community is pursuing overlapping agreements in two Management Units. • Marten Falls First Nation is discussing potential business, employment, planning and licensing opportunities. The community is pursuing overlapping agreements in two Management Units.
99/00	• Discussions in the district are at an advanced stage and are ongoing. • One First Nation contractor was hired to operate on private lands. • Many of the tree planters hired by Dew North Exploration were of Aboriginal decent.
	Contracts
95/96	• Possibilities for harvesting and for silviculture work were evaluated. • The Community Forest of Geraldton hired members of First Nations to pick seed cones. • Tree planting has been done for a number of years by Red Rock First Nation. • Rocky Bay First Nation indicated its interest in silviculture work and conducted a harvesting training program in the previous year. They also worked with Domtar to set up a manual-tending project for the following year.
96/97	• A project supported by the Forestry Futures Trust was initiated with a First Nation as the MNR partner implementing the forest renewal contracts. This potentially involves over $650,000 in silvicultural contracts over three years. • First Nations contracting opportunities include a 50,000 tree plant contract and forest assessment contracts. Over $100,000 in contracts were awarded to Aboriginal businesses.
97/98	• Discussions are focusing on access to licenses, silviculture and employment opportunities. • A First Nation completed a tree plant contract estimated at $14,200. • Lake Nipigon Ojibway First Nation are pursuing silvicultural opportunities. The community was under contract to complete tree planting and stocking assessment. • A First Nation had a $210,800 silvicultural contract for tramping, site preparation and tree planting. • Another First Nation had a $43,000 contract to complete tree planting on two forest management units.
98/99	• A First Nation had silvicultural contracts estimated at $121,000. • Another First Nation received silvicultural contracts estimated at $116,000. • Lake Nipigon Ojibway First Nation is pursuing silvicultural opportunities. The community was under contract to complete tree planting and stocking assessments.
	Licences
96/97	• A forest company was required to work cooperatively with the Crown to provide opportunities to three First Nations to negotiate overlapping agreements for areas to be harvested under the terms of a Forest Resources License(s).

	• Harvesting allocation commitments were negotiated with First Nations for extended terms of up to five years. • A forest company has an arrangement to obtain 20,000 cords from a First Nation supplier. As well, allocations of over 100,000 cubic metres of wood were provided to Aboriginal communities and businesses.
97/98	• A First Nation is negotiating an overlapping 5-year Forest Resource Licence for a 289,700 cubic metre wood allocation. • A First Nation member was issued a third party salvage license for 13,000 cubic metres of wood. • Rocky Bay First Nation has an overlapping Forest Resource Licence for 72,000 cubic metres of wood. The community is pursuing a joint venture to develop expertise and capacity in harvesting. • Red Rock First Nation is harvesting under an overlapping Forest Resource Licence for 51,400 cubic metres of wood. The community is pursuing increased harvest allocations and other forest management opportunities. • Gull Bay First Nation, through an affiliate Nigaani Enterprises, has a harvest allocation. The community harvested 105,000 cubic metres of wood.
98/99	• A First Nation has a harvest allocation of 110,000 cubic metres of wood. • Red Rock First Nation is harvesting under an overlapping Forest Resource Licence for 56,500 cubic metres of wood. • Rocky Bay First Nation has an overlapping Forest Resource Licence for 51,000 cubic metres of wood.
	Training, Recruitment and Employment
95/96	• A company was required to work with Native communities to develop a Native Recruitment, Training and Employment Strategy. • Some First Nation peoples harvested on a contract basis for the local forest industries.
96/97	• A forest company, as a condition of a license, is required to work with local First Nation communities to develop a Native Recruitment, Training and Employment Strategy and a Strategy for Creating Business Opportunities for Natives. The company created the "First Nations Training and Development Program,First Nations Recruitment Plan and First Nations Business Development Plan. • It is estimated that over 200 Aboriginal people are employed in the forest sector in the Nipigon District. • MNR and a forest company sponsored Aboriginal Resource Technician students attending Distance Education Program at Sault College.
97/98	• A request for a community sawmill remains unresolved. It is estimated that 21 community members are employed in the forestry sector. • Ginoogaming First Nation have an estimated 60 members employed in the forest mill in Longlac. • Long Lake #58 First Nation have an estimated 14 members employed in the forestry sector.
98/99	• It is estimated that 35 community members are employed in the forestry sector. • Ginoogaming First Nation has an estimated 60 members employed in the mill in Longlac.
99/00	• It is estimated that over 100 First Nation people are employed in the two lumber mills in the district.

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North Bay District **Management Units including:** Temagami, Nipissing Forest	
First Nations or other Aboriginal communities situated within the District: The three First Nation communities located within North Bay District are Temagami, Dokis, and Nipissing First Nations.	
	Relationships and Participation
96/97	• Three Aboriginal communities participated on the forest management planning teams. Native background information reports are under development.
97/98	• A First Nation working group has been developed with representation from local Aboriginal communities. First Nations are involved in the preparation of the Forest Management Plan, and increasing access to opportunities through silvicultural contracts and harvest operations. • The three communities participated in preparation of Native Background Information Reports and values maps. The communities are sitting as members of the planning team for the 1999 Forest Management Plan. • The District provided partial funding for 3 liaison positions in First Nations to explore forest economic development opportunities and to participate in forest management planning.
98/99	• Discussions on forestry opportunities with Dokis, Nipissing, and the Mattawa/North Bay Algonquins are at an advanced stage.
99/00	• MNR provided $20,000 in funding for a liaison officer with the Temagami First Nation in order to facilitate the continuation of business opportunities with respect to the forest management planning process. Total funding rose from $166,000 in 1998/99 to $240,000 in 1999/00. • A dozen meetings took place in 1999/00 and discussions regarding forestry opportunities are at an advanced stage. The Metis Nation of Ontario discussions are at an early stage.
	Contracts
95/96	• There was communication with the First Nations with the intent of involving them in the silviculture and harvesting opportunities presented within the district.
96/97	• A $60,000 silvicultural contract was provided to a First Nation. • A 3-year proposal for a $3.6million contract for 9,000 hectares of pre-commercial thinning was under development.
97/98	• Agreement was reached on the approval of a proposal for funding of a pre-commercial thinning project. The three First Nations are implementing the project in conjunction with the Sustainable Forest Licence company. The value of contracts issued to aboriginal communities is estimated at $250,000 for pre-commercial thinning, funded by Forest Futures Fund. • Temagami First Nation discussions are at an advanced stage. Opportunities exist for silvicultural contracts and to conduct harvest operations in the area set aside in the Temagami Comprehensive Planning exercise. The First Nation, Sustainable Forest Licence holder and two local companies are discussing renewal and maintenance activities on licensed areas. • Temagami First Nation signed a renewal and maintenance agreement to complete 265 hectares of manual tending that employed 12 community members during the term of the contract
98/99	• The value of contracts issued to Aboriginal communities in the district is estimated at $350,000 for pre-commercial thinning. The contract provided 2,302 person

	days of employment.
99/00	• Temagami First Nation also completed 300 hectares of tending and pre-commercial thinning for an estimated $216,000. Funding was secured for a three–year, pre-commercial thinning project which was initiated in May 1999 and is worth an estimated $720,000. Approximately 10 aboriginal people were hired as a direct result.
	Licenses
95/96	• The Dokis First Nation and Nipissing First Nations were each issued a Forest Resource Licence. • The Sustainable Forest Licence holder was willing to negotiate harvesting arrangements with the First Nations.
96/97	• Two timber licences were issued to two First Nations to cut 7500 cubic metres of wood in 1996/97. Additional allocations are available over a five-year period. There are approximately twelve jobs associated with the licences.
97/98	• Dokis First Nation has a Forest Resource Licence license for 5 years for a total of 17,544 cubic metres of wood. • An opportunity was provided to sign an overlapping license to be a partner in the Sustainable Forest Licence. Negotiations have been initiated to have Dokis sign an overlapping license agreement and to become a partner in the Sustainable Forest Licence. • A member of the Nipissing First Nation was issued an overlapping Forest Resource Licence license, as the member is a partner in the Sustainable Forest Licence. The license is for 5 years and provides a wood allocation of 14,938 m^3. • The Temagami First Nation has a Forest Resource Licence for a two-year term to harvest 7,650 cubic metres of wood. Five seasonal jobs are associated with the license.
98/99	• Dokis First Nation has a Forest Resource Licence licence with an allocation of 17,544 cubic metres of wood. • A Nipissing First Nation member has an overlapping Forest Resource Licence licence under the Sustainable Forest Licence. A wood allocation of 14,938 cubic metres was available under the licence. • Temagami had a 3,500 cubic metre wood allocation. • The Mattawa/North Bay Algonquin community, through an affiliated Aboriginal business (Madadjiwan Economic Development Corporation), has a Forest Resource Licence and a wood allocation of approximately 15,000 cubic metres.
99/00	• The Temagami First Nation was allocated 22,208 cubic metres of wood or roughly two percent of the total available harvest area in the Temagami Management Unit. The allocation for the previous year was only 3,500 cubic metres by comparison.
	Training, Recruitment and Employment
95/96	• There were job opportunities available with the Sustainable Forest Licence holder and with silvicultural contractors working for the Sustainable Forest Licence. • MNR had agreements with the First Nations within the district to establish fire-suppression crews. • The Temagami First Nation signed a three-year renewal and maintenance agreement through the Forestry Futures Trust fund. • The Temagami Band completed a manual tending project that employed 13 band members. • Discussions were ongoing with all bands to explore potential forestry

	opportunities within North Bay district.
96/97	• Three First Nation's members were scheduled to attend a tree marking certification course.
97/98	• The Mattawa Algonquin community has expressed an interest in harvesting opportunities in unassigned allocated blocks or work on a contractor basis on an existing licensee area. • Members from the community attended training sessions in forestry operations. Eight members received chainsaw certification, one member received skidder certification and one member attended a two-day compliance training session. • It is estimated that 3 full time and 5 part time jobs are associated with the licenses issued to the Aboriginal communities. • Training opportunities provided to First Nation members were for three members to attend the tree marking licensing course, one member to attend compliance monitoring training and a summer employment opportunity was provided by the Sustainable Forest Licence company.
98/99	• The MNR provided partial funding ($30,000) for three liaison positions in Aboriginal communities to pursue forest management opportunities and to participate in the forest management planning exercise. • Three other First Nation members attended tree-marking training courses.
99/00	• Three First Nation candidates in this district attended and completed a tree-marking course.

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Parry Sound District **Management Units including:** Bracebridge, Georgian Bay	
First Nations or other Aboriginal communities situated within the District: Moose Deer Point, Wahta, Wasauksing, Shawanaga, Magnetawan, and Henvey Inlet	
	Relationships and Participation
96/97	• 7 First Nations were contacted as part of the consultation process for the 1999/2000 Forest Management Plan. • Communities participating in consultations expressed an interest in employment, training and development opportunities. • A First Nation representative participates on the Forest Management Planning process. • One community is involved in the development of a Native background information report. • One community has a member on the local citizens committee.
97/98	• First Nations in the district have participated in forest management planning meetings. • Land claims and boundary disputes are reasons that some First Nations have elected not to participate in forest management planning or pursue forest management opportunities.
98/99	• Henvey Inlet First Nation is completing a Native Background Information Report and Native Values map. • Shawanaga First Nation is completing a Native Background Information Report Report and Native Values map, and they have a member on the Local Citizens Committee.
99/00	• Henvey Inlet and Dokis First Nations have completed Native Background Information Reports and the Shawanaga and Magnetawan First Nations are in the process of completing these reports. • Dokis First Nation has a member on the forest management planning team, Shawanaga First Nation has representation on the Local Citizens Committee, and a member of the Wahta First Nation is a member of the local Sustainable Forest Licence planning team (Westwind Forest Stewardship Inc).
	Contracts
98/99	• Dokis First Nation had a $50,000 contract to complete silvicultural work. One First Nation member attended a tree-marking training course.
99/00	• A silvicultural contract was also awarded to Dokis First Nation, valued at $50,000.
	Licenses
96/97	• One Aboriginal entrepreneur held a timber licence for 800 cubic metres, creating three seasonal jobs during 1996/97.
99/00	• Limited Crown resources, as well as ongoing land claims and full licence allocations, provide few Aboriginal opportunities within the district, although negotiations have been initiated to allocate a small surplus of timber. A portion of this allocation was successfully designated to the Dokis First Nation.
	Training, Recruitment and Employment
96/97	• Industry was involved in negotiating a training program with one First Nation. The District makes in-house training available to First Nation people.
97/98	• Henvey Inlet First Nation expressed interest in pursuing wood allocations and training opportunities. • Discussions between Shawanaga and a local forest company around

	employment opportunities in a harvest block adjacent to their territory ended when the Alban mill closed. • Dokis First Nation is pursuing wood allocations and training opportunities. • The Sustainable Forest Licence holder has attended meetings with First Nations and offered wood allocations and technical training opportunities.
99/00	• Henvey Inlet First Nation expressed an interest in wood allocations and training opportunities. • Discussions between Shawanaga First Nation and a local forest company around employment opportunities in a harvest block adjacent to their territory ended when the Alban mill closed. • Dokis First Nation is interested in pursuing wood allocations and training opportunities. • The Sustainable Forest Licence holder has attended meetings with First Nations, offered wood allocations and technical training opportunities.

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Pembroke District **Management Units including:** Ottawa Valley Forest	
First Nations or other Aboriginal communities situated within the District: The district is in advanced stages of discussion with the Algonquins of Pikwakanagan (formerly Golden Lake), Algonquins of Greater Golden Lake and Area, and the Mattawa-North Bay Algonquins.	
	Relationships and Participation
95/96	• The Algonquins of Golden Lake First Nation has been very active in the forest-management planning process in Pembroke district.
96/97	• Algonquins of Golden Lake First Nation have been active in forest management and harvesting, and participated in Sustainable Forest Licence negotiations. • Ontario Native Affairs Secretariat and MNR provided a report to industry and First Nations outlining potential business opportunities in the silvicultural services industry.
97/98	• Algonquins of Golden Lake First Nation is becoming involved in forest management and harvesting on a larger scale, including participation in Sustainable Forest Licence negotiations.
98/99	• Algonquins of Golden Lake First Nation, through an affiliated company (Makwa Community Development Corporation Inc.), are an overlapping licensee and associate partner on the Sustainable Forest Licence. As such, they have participated in the annual planning, silvicultural layout, and harvest operations.
99/00	• Local First Nation communities have been involved in the development of upcoming Native Background Information Reports, two of which have been fully completed including maps, value identification, and recognition of issues for further investigation. • Representation by both industry and First Nations at meetings and workshops was exemplary.
	Contracts
96/97	• A First Nation company was involved in setting up a tree nursery on the former nursery site at the Petawawa Research Forest. The District provided technical advice on this initiative. • Two First Nation affiliated forest operators were the successful bidders on tenders that provided them with silvicultural contracts valued at $ 14,500.
97/98	• Makwa Economic Development Corporation and the Federal Forestry Service negotiated a long-term lease for the former tree nursery site at Petawawa Research Forest. • A renewal and maintenance agreement was signed with Makwa Economic Development Corporation to conduct tree marking on 300 hectares on the community allocation area. • Makwa Economic Development Corporation hired a forest manager to plan and implement harvest and silviculture operations. The forest manager has completed tree-marking contracts. • Silviculture and sustainable forestry education opportunities continue to be provided.
98/99	• Makwa Community Development Corporation administers timber allocations and the Corry Lake Tree Nursery, and employs five Aboriginal people on a permanent basis and provides several seasonal positions.
99/00	• Ottawa Valley Forest Inc., which represents 12 member companies, has been in advanced discussions with Aboriginal communities and has identified potential

	opportunities including silvicultural contracts for harvest prescriptions, layout, tree marking, stand improvement, tending, pruning, data collection, and the production of nursery stock. • Kakina Forestry and Consulting Services was hired by the Sustainable Forest Licence to cruise 700 hectares of potential harvest area for the 2001-2006 forest management plan, and performed forest compliance activities on Makwa Economic Development Corporation harvest operations. In addition, they conducted a total of 47 hectares of manual cleaning and a total of 625 hectares of tree marking. • Contracts have also been issued for, or completed for, the production of nursery stock, between Ottawa Valley Forest Inc. and the Cory Lake Facility operated by the Makwa Economic Development Corporation, as well as 40 hectares of pruning and 500 hectares of tree marking by Randy Commanda Forestry Services.
	Licenses
95/96	• The The Algonquins of Golden Lake First Nation were provided an allocation of 100 hectares per year for the management planning period1996 to 2001. • Algonquin Band-affiliated companies were also involved with open public tenders for harvesting opportunities. Discussions were also ongoing with the existing forest industry within Pembroke district.
96/97	• Discussions with respect to licensing the timber allocation of 500 hectares outlined in the 1996 to 2001 Forest Management Plan occurred. This allocation translates into an annual average of 100 hectares. • A First Nation affiliated forest operator, also obtained a small licence on Crown land and four agreements for the sale of timber on Renfrew County Forest.
97/98	• The Algonquins of Golden Lake First Nation, through an affiliate Makwa Economic Development Corporation was issued a forest resource licence to harvest 112 hectares or 20% of their five year bwood allocation. The community has two forest companies; Reserve Forestry and Guiding and Randy Commanda Forestry. • The community is becoming a partner in development of a Sustainable Forest Licence that will involve a shareholder agreement and comprehensive business plan. • An additional 105 hectares was provided to one of the three First Nation forest companies.
98/99	• Randy Commanda Forestry Services, Reserve Forestry and Guiding were under contract to harvest 10,000 cubic metres of wood.
99/00	• The Algonquins of Pikwakanagan First Nation (formerly known as Golden Lake), through an affiliated company (Makwa Community Development Corporation Inc.), have maintained an overlapping Forest Resource Licence license and have been involved as an associate partner on the Sustainable Forest Licence since 1996. During 1999/00, this licence achieved a realized harvest of 20,167 cubic metres (an increase of 11,867 cubic metres from the previous year).
	Training, Recruitment and Employment
95/96	• The involvement of the Algonquins of Golden Lake First Nation with forest operations within Pembroke district provided between six and nine full-time jobs. • Six student resource technicians from the Algonquin Band trained through work programs with MNR. Skills such as tree marking, timber cruising, cartography, line running for harvesting, data collection, and clerical support were emphasized. • Algonquin Band members also attended several courses held by the district

96/97	- Two band members attended the Provincial Tree Marker Licensing course. - It is estimated that 16 Aboriginal people worked in mills and bush operations for the major licensees operating on crown land. There are likely other Aboriginal people employed in mills relying on private land wood supply and bush operations on private lands but figures are not available for these areas.
97/98	- Harvest operations resulted in an estimated 4-6 jobs for Aboriginal people. - Two members of the Algonquins of Golden Lake First Nation attended the provincial tree marker licensing course.
98/99	- Randy Commanda Forestry Services, Reserve Forestry and Guiding, and Kakina Forestry Services are the primary Aboriginal businesses that are involved with the forestry operations on the Sustainable Forest Licence, and collectively they employed approximately seven Aboriginal people. - Sustainable Forest License shareholding companies employ an estimated four members from the Algonquins of Golden Lake and 24 Aboriginal people from off-reserve. - Twenty-four Aboriginal people attended forest management and related training sessions.
99/00	- Makwa Community Development Corporation administers timber allocations and the Corry Lake Tree Nursery, which employs five permanent Aboriginal staff and provides several seasonal positions. - Randy Commanda Forestry Services harvested 136 hectares during 1999/00 for the overlapping Forest Resource Licence. This included all related stand improvements and road construction, and employed seven First Nation people. Randy Commanda Forestry Services also harvested an additional 52 hectares, which directly employed six individuals. - It is estimated that 30 Aboriginal people were directly employed in the forest sector last year within the Pembroke District. - Ottawa Valley Forest Inc. has conducted fire training for six Aboriginal forest workers and staff members have participated in the delivery of tree marking courses for Aboriginal people both on-site and across Ontario. They have also endorsed Aboriginal requests for funds to conduct education/training development.

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Red Lake District **Management Units including:** Red Lake Forest, Trout Lake Forest	
First Nations or other Aboriginal communities situated within the District: There are seven First Nations communities located within the Red Lake District, including Deer Lake, Kee Way Win, MacDowell Lake, North Spirit Lake, Pikangikum, Poplar Hill, and Sandy Lake. Cat Lake, Wabaskang, Slate Falls, Grassy Narrows, and Lac Seul First Nations also carry out operations within their traditional use areas in the district.	
	Relationships and Participation
95/96	• Early-stage discussions took place with the Pikangikum First Nation re: New Business Relationship negotiations on the Red Lake Management unit. MNR indicated it was committed to defining opportunities for the First Nation in forest management. • Both Avenor and Stone Consolidated Ltd. were instructed to communicate with Pikangikum First Nation and explore opportunities for inclusion in their business plan for a Sustainable Forest Licence on the Red Lake Management Unit.
96/97	• Two First Nations outside the District boundary were active in forest management in the District.
97/98	• Wabauskang First Nation (located within the Patricia Forest, Kenora District) was in discussion with the Red Lake District on Native values mapping and economic development opportunities on the Trout Lake Forest. • Cat Lake First Nation (a remote community located in Sioux Lookout District with some traditional use area overlapping the Trout Lake Forest) expressed interest in pursuing forest management operations, planning and economic development opportunities. Discussions with a local forest company have been ongoing.
98/99	• Maamawai, a group of Aboriginal people living off-reserve in the community of Red Lake, are involved in active discussions about economic development opportunities in the forest sector. All seven communities are remote, with winter access only, and are not located within designated district forest management units. • A local forest company met with Cat Lake First Nation to discuss long-term economic development opportunities. • Pikangikum First Nation is at an advanced stage in discussions on forest management opportunities.
99/00	• Maamawai, a group of Aboriginal people living off-reserve in the community of Red Lake, are involved in discussions about economic development opportunities in the forest sector.
	Contracts
99/00	• Some contracts for cone picking and removal of nuisance beavers were issued.
	Licenses
95/96	• Obishikokaang Resources Corp. Inc., of the Lac Seul First Nation, and Mikinaaki Community Development Corporation, of the Wabauskang First Nation, had licences to harvest Crown timber.
96/97	• Two First Nations held overlapping licences in the District.
97/98	• Mikinaak Community Development Corp. was issued an overlapping Forest Resource Licence to harvest 12,400 cubic metres of wood on the Trout Lake Forest. • Lac Seul First Nation holds an overlapping Forest Resource Licence to harvest 57,000 cubic metres of wood through an affiliate Obishkokaang Resources Corp.

	This license provides employment for six community members.
	Training, Recruitment and Employment
95/96	• Avenor was asked to produce a report entitled A Strategy for First Nation Recruitment, Training and Employment and Business Opportunities, in conjunction with a conditional wood supply agreement with the proposed Ear Falls sawmill.
96/97	• It is estimated that over 100 Aboriginal people work in the forest industry within the Red Lake District. • Avenor produced and implemented a report entitled A Strategy for First Nation Recruitment, Training and Employment and Business Opportunities, in conjunction with a conditional wood supply agreement. Under the agreement, First Nation people can receive training on their reserves and subsequently obtained jobs at wood processing facilities.
97/98	• The sawmill at Ear Falls employs an estimated 27 Aboriginal people. • A local forest company on the Trout Lake Forest, in conjunction with the Dryden Tribal Council, provided adult education opportunities to qualify aboriginal people for employment opportunities at the Ear Falls sawmill. On the job training opportunities were provided to newly hired Aboriginal people at the sawmill.
98/99	• Maamawai met regularly with the MNR and the local forest companies to discuss employment opportunities in the forest sector. • An estimated 46 Aboriginal people work in saw mills and bush operations in the District. • MNR and a local forest company are co-sponsoring two Aboriginal students to attend Sault College's distance education Aboriginal Resource Technician program.
99/00	• Pikangikum First Nation has met regularly with the MNR and the local forest companies to discuss employment opportunities in the forest sector. Discussions are ongoing, regarding ventures under the Northern Boreal Initiative. • Discussions occurred between Lac Seul First Nation and local forest companies. • A local forest company met with Cat Lake First Nation to discuss long-term economic development opportunities. • An estimated 46 Aboriginal people work in saw mills and bush operations in the Red Lake District.

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Sault Ste. Marie District **Management Units including:** Algoma, Mississagi	
First Nations or other Aboriginal communities situated within the District: Batchewana, Garden River, Thessalon, Mississauga, and Serpent River.	
	Relationships and Participation
95/96	• Discussions were held with the North Shore Tribal Council to support a joint Northern Ontario Development Agreement Aboriginal Training Initiative with MNR.
96/97	• An Aboriginal organization participated as a member of the Blind River Local Citizens Committee that provides advice to the planning team preparing FMPs. • The forest industry met with all First Nations to discuss FMPs and to review forest management opportunities.
97/98	• Regular meetings were held with local First nations and the North Shore Tribal Council to discuss forest management opportunities under the Sustainable Forest Licence and to negotiate a framework agreement. • Two forest companies, MNR, and the SFL holder for the Algoma area were in regular dialogue with Batchewana and Garden River First Nations. The meetings provided a forum to explore interests, capabilities, training, development needs, and present opportunities to participate on forest management planning teams and local citizen committees.
98/99	• The North Shore Tribal Council was in regular discussion with MNR on forest management opportunities. • Aboriginal participation in forest management planning and the preparation of a Native Background Information Report and collection of Native Values were discussed. • Meetings were held between the two First Nations, MNR, the SFL holder, and two forest companies in the Algoma area to explore interests, capabilities, training, development needs, and economic opportunities.
99/00	• Clergue Forest Management worked with Batchewana to develop a forest strategy, FMP and business plan for the reserve. Clergue Forest Management provided expertise and GIS services to map native resources.
	Contracts
95/96	• The North Shore Tribal Council conducted operational cruising and volume table sampling on 2,000 hectares in the Mississagi Management Unit to support harvest prescription setting.
96/97	• A small pre-commercial thinning project was completed by an Aboriginal organization that provided short-term employment for three Aboriginal people. • A number of cone collection contracts were issued to local First Nation members. • An aboriginal logger was issued a Forest Resource Licence (less than 100 hectares) on the Northshore Area.
97/98	• The North Shore Tribal Council was under a $10,000 contract to plant 54,000 seedlings and a $18,000 contract to provide tree plant assessment. • Garden River First Nation had a contract with a local forestry company for on-reserve road construction and to install five bridges • Garden River First Nation had harvesting contracts for 40,200 cubic metres of wood.
98/99	• Mississauga First Nation had a manual-cleaning contract totaling $26,000. • Other contracts issued to Aboriginal people totaled $23,000 for cone collection, regeneration assessment, and cruising.

	• Garden River First Nation held a contract with Clergue Forest Management to plant 30,000 trees.
99/00	• Mississauga First Nation was issued a planting contract for 30,000 trees with training in management and supervision also provided. • The North Shore Tribal Council received a contract for the collection of 267 hectalitres of cones. • M'TIWA-Ki Services was contracted for two regeneration assessments totaling 2,400 hectares. • Mississauga First Nation received and contract for 50 hectares of manual cleaning. • A 50-hectare area was provided for tree marking certification and the North Shore Tribal Council was contracted by MNR to digitize cultural heritage values on the Northshore Forest (created through the amalgamation of the Spanish and Mississagi Management Units on April 1, 2000). • Contracts from industry were valued at $58,007, and from MNR at $11,805. • Garden River First Nation held a contract with Clergue Forest Management to plant 30,000 trees, with training and supervision also provided.
	Licenses
95/96	• Negotiations were to take place to develop a Sustainable Forest Licence for the Northshore Forest and were to include potential opportunities for First Nations.
96/97	• A timber licence was issued to an Aboriginal logger for 100 hectares.
97/98	• An Aboriginal individual within the North Shore Tribal Council area was issued a Forest Resource Licence to access wood allocations on 99 hectares.
98/99	• Wood allocations were issued to two Aboriginal forest companies on 1,819 hectares.
99/00	• An allocation of 2,000 cubic metres of wood has been earmarked for the Garden River First Nation • Within the Mississagi Management Unit, six Forest Resource Licences totaling 1,878 hectares were issued. Five were issued to the Robinson-Huron Forestry Co. and one was issued to another Aboriginal individual. • Wood allocations totaled 23,610 cubic metres.
	Training, Recruitment and Employment
95/96	• The district participated in training associated with the Native Resource Technician Program at Sault College. This training program resulted in employment for four individuals with MNR and one at Agawa Forest Products Ltd.
96/97	• A jointly funded road project was negotiated between a First Nation and the forest industry. • Two Native staff from an Aboriginal council attended a tree-marking course. • MNR loaned geographic information system equipment to the council for training purposes.
97/98	• Local forest companies and MNR provided training opportunities in Native conservation officer, first aid, CPR, cut and skidder certification, and tree marking for one First Nation. • It is estimated that 15 Aboriginal people work in the forest sector.
98/99	• The MNR provided tree marker training assistance for six Aboriginal people. • Algoma SFL holder provided co-op opportunity for Native Resource Technician program and MNR participated as well.
99/00	• 4 First Nations individuals completed an tree-marking course funded by MNR. • Six individuals participated in a Forest Ecosystem Classification workshop and

	three other individuals were involved in forest-related training activities. • It is estimated that 80 First Nation people are employed in the forestry sector within the district. • Clergue Forest Management assisted in forest management training activities with Batchewana First Nation. • Algoma SFL holder provided co-op opportunity for a student in Sault College's Native Resource Technician program and MNR participated as well.

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Sioux Lookout District **Management Units including:** Caribou West, Lac Seul Forest, Sioux Lookout (Abitibi), Sioux Lookout	
First Nations or other Aboriginal communities situated within the District: There are 14 First Nations communities located in the Sioux Lookout District, of which only three (Lac Seul, New Slate Falls, and the Ojibway Nation of Saugeen) are located within the Area of the Undertaking of the Timber EA decision. Mishkeegogamang (Osnaburgh) and Cat Lake have some of their traditional lands located within these forest management units.	
	Relationships and Participation
95/96	• All First Nations located our with use in the District and the Area of the Undertaking (Lac Seul, Cat Lake,Windigo, Slate Falls, Osnaburgh, and Saugeen) were contacted about the consultation opportunities regarding the Caribou and Lac Seul FMPs. • Preliminary discussions occurred with the Saugeen First Nation and the Windigo First Nations Council. There was no response from the other four communities. • The local forest industry, First Nations and MNR discussed forestry-related opportunities.
96/97	• All First Nations located our with use in the District and the Area of the Undertaking (Lac Seul, Cat Lake,Windigo, Slate Falls, Osnaburgh, and Saugeen) were contacted about the consultation opportunities regarding the Caribou and Lac Seul FMPs. • Sioux Lookout's Local Citizens Committee membership includes representation from one First Nation community. Two other First Nations were asked to participate as members of the Local Citizens Committee. • MNR had preliminary discussions with two First Nations interested in pursuing opportunities. • The local forest industry, First Nations and MNR discussed forestry-related opportunities.
97/98	• Ojibway Nation of Saugeen, MNR and the local forest company discussed future harvesting opportunities.
99/00	• Negotiations are underway within the district regarding road construction, harvesting, and upcoming forest operations.
	Contracts
95/96	• Lac Seul First Nation had a harvest contract with McKenzie Forest Products. Part of this contractual agreement obliged McKenzie to train Lac Seul members in forest operations.
97/98	• Lac Seul First Nation has a harvesting contract with a local forest company.
	Licences
95/96	• Saugeen First Nation had an allocation on the Caribou West Management Unit • Lac Seul First Nation had an allocation on the Sioux Lookout Management Unit.
96/97	• Timber allocations are available to First Nations.
97/98	• Lac Seul First Nation is one of the parties negotiating for the Sioux Lookout Crown Sustainable Forest Licence. • Slate Falls First Nation expressed interest in road access to their community and employment from harvest activities. The local forest company continues to negotiate forest operations agreements with the First Nation
98/99	• Lac Seul First Nation has 150,000 cubic metres of available wood supply that has not been pursued due to access concerns.

99/00	• Lac Seul First Nation has 150,000 cubic metres of available wood supply that has not been pursued due to access concerns. • Saugeen First Nation was allocated 65,700 cubic metres of wood, which subsequently was not harvested due to technical and operational issues.
	Training and Employment
95/96	• Many members of the various First Nations were employed by the local forest industry in woodlands and mill operations. • MNR supported the education and training in the Native Forestry Technician Distance Education Program.
96/97	• It is estimated that one company provides 60 jobs to Aboriginal people in harvesting, road construction, and mill operations. • Training in forest and transportation operations are obligations a company made under agreement with a First Nation. • Aboriginal communities continue to negotiate for increased access to opportunities. • A member from a First Nation operated a small sawmill. The sawmill provides lumber products for local community and mining needs. • MNR supported the education and training of an individual in the Native Technician/Distance education program. Four community members were trained in this program. Aboriginal loggers continue to be trained in logging practices and regulations.
97/98	• Lac Seul First Nation members continue to be hired in mill, forest and ferry operations in the area.
98/99	• It is estimated that 60 Aboriginal people are employed in a local sawmill, woodland operations, and ferry services.
99/00	• It is estimated that 62 Aboriginal people are employed in a local sawmill, woodland operations, and ferry services. • Bowater Pulp and Paper Canada Inc. is establishing a First Nations Ontario Ranger Program (similar to MNR's Ontario Ranger Program) and was recognized for their role in the development of the "Employers Toolkit" for the Aboriginal Workforce Participation Initiative.

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Sudbury District **Management Units including:** Sudbury, Lower Spanish Forest, Spanish River	
First Nations or other Aboriginal communities situated within the District: Wikwemikong First Nation, Serpent River First Nation, Sagamok Anisnawbek First Nation, Whitefish Lake, Whitefish River, Wahnapitae Indian Reserve #11 and Point Grondine Indian Reserve #3.	
	Relationships and Participation
95/96	• Representatives from the Sagamok and Wikwemikong First Nations are members of E.B. Eddy's Forest Advisory Committee.
96/97	• Forest management planning continued with Aboriginal involvement. • First Nations continue to be members of a forest company's advisory committee established to seek out employment opportunities for Native people in bush operations.
97/98	• An opportunity to become a member of the forest management planning team was extended to the local First Nation communities.
	Contracts
95/96	• A local company contracted local First Nations to harvest wood from its company land.
96/97	• Tree planting contract for 20 hectares (43,000 trees, eight seasonal jobs), and a 20-hectare precommercial thinning training site. • A local company continues arrangements for a First Nation to harvest wood from its private land.
97/98	• Contracts were issued to plant 177,000 trees and conduct manual tending and pre-commercial thinning on 90 hectares. • The Sustainable Forest Licence holder for the Spanish Forest awarded 300 hectares of juvenile spacing to First Nations.
98/99	• The Sustainable Forest Licence holder entered into a contract for a 158-hectare tree-plant and 34 hectares of pre-commercial thinning. The estimated value of the contracts were $36,700 and $15,300, respectively, and provided an estimated 24 seasonal jobs for members in the community. • Whitefish Lake First Nation had a tree-planting contract for 50 hectares estimated at $11,000, a manual tending contract for 64 hectares estimated at $19,000, and a cone collection contract for 83 hectalitres issued to the community was estimated at $8,600. • Two Aboriginal contracting companies had a tree-planting contract for 228 hectares estimated at $77,000 and a manual-tending contract for 53 hectares estimated at $11,000.

99/00	• Whitefish Lake First Nation had two surveying contracts on a total of 5,781 hectares. • Sagamok Anishnawabek First Nation was contracted to manually tend 19 hectares for $8,550. • The Sustainable Forest Licence holder contracted with Sagamok First Nation to plant 284,157 trees on 165 hectares for about $44,000. • The Wikwemikong First Nation was issued a contract for 311 hectares of thinning • The Sucker Creek First Nation was issued a contract to collect 400 hectalitres of cones and an individual First Nation member was issued a contract for the collection of 80 hectalitres of cones. • Two private Aboriginal contracting companies had a tree-planting contract for 184,000 trees and a manual tending contract of 190 hectares. • The Wauwauskinga First Nation was awarded a contract to perform an upcoming regeneration assessment on 1,900 hectares of land in the amalgamated Spanish Forest.
	Licences
95/96	• The Vermilion Forest Management Co. Ltd., a Sustainable Forest Licence comprising ten licensees, will be required to include the Aboriginal communities in its forest management planning process.
96/97	• A five year timber allocation of 560 hectares, with 379 hectares licenced this year, and a 181 hectare licence from 95/96 renewed for this year.
97/98	• The Sustainable Forest Licence holder for the Sudbury Forest is to negotiate an agreement with local First Nations to include Aboriginal people in forest management planning, silvicultural contracts, training and harvesting. • Sagamok First Nation received Forest Resource Licences to harvest approximately 23,364 cubic metres of wood from 379 hectares • In December 1997 an amendment to the Forest Management Plan approved an allocation of 889 hectares (57,982 cubic metres) of wood to the 10 First Nations in the Sudbury District, and the amendment also provided for a long-term commitment of 1216 hectares in future planning periods.
98/99	• Sagamok First Nation was allocated 99 hectares (6,400 cubic metres) for harvesting. • A conglomerate of 10 First Nations were allocated 135 hectares (8,800 cubic metres) of wood for harvesting.
99/00	• The Sagamok First Nation was allocated 429 hectares (22,099 cubic metres) for harvesting. • The Wikwemikong First Nation was issued a salvage licence for 1,400 cubic metres of wood. • The West Bay First Nation engaged in a second-pass harvest of white and red pine and white birch veneer with unreported harvest levels. • A conglomerate of 10 First Nations was allocated 742 hectares (41,600 cubic metres) of wood for harvesting, with 453 hectares (27,500 cubic metres) of this area licenced this year. • N'Swakamok, a forestry company representing 5 First Nations, harvested 3,000 cubic metres of wood and 80 hectalitres of cones.
	Training, Recruitment and Employment
95/96	• One First Nation is an established licensee that employs staff in supervisory and operational roles.
96/97	• Funding assistance was provided for education and training of two Aboriginal

	students. • A three-year co-op placement for one Aboriginal Technician was established. • Over 125 Aboriginal community members, from within the District, were employed as seasonal fire fighters in Ontario. • MNR assisted Aboriginal communities with the development of a business plan, training strategy and a forest strategy. • Two seasonal Aboriginal students were hired to collect values mapping and monitor forest operations.
97/98	• Four First Nation members attended the provincial tree-marking course. • Seasonal employment opportunities were offered to First Nations, and a commitment to sponsor Forestry Technician Co-op student placement was maintained. • It is estimated that 22 First Nation members received seasonal employment through contract work.
98/99	• 8 individuals from local First Nations attended a tree-marking training course sponsored by MNR. • A Sustainable Forest Licence holder provided operational tree-marking training for a member of Henvey Inlet First Nation. • Two forestry students, one from Dokis and a co-op student, were hired to work on the Sustainable Forest Licence during the summer.
99/00	• 12 individuals from local First Nations attended a tree-marking training course sponsored by MNR. • The Sustainable Forest Licence holder provided operational tree-marking training and certification for six members from Sagamok First Nation. • An employment opportunity was provided for a Lakehead University Student from the Wikwemikong First Nation.

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Thunder Bay District **Management Units including:** Armstrong Forest, Black Sturgeon Forest, Brightsand Forest, Dog River-Matawin Forest, Kiashke River, Lakehead Forest, Spruce River Forest	
First Nations or other Aboriginal communities situated within the District: The four First Nations located within Thunder Bay District are Fort William, Gull Bay, Lac Des Mille Lacs, and White Sand. In addition, Thunder Bay District has been consulting with a number of Aboriginal communities and Metis organizations.	
	Relationships and Participation
95/96	• Niigaani Enterprises and Kiashke River Native Development Inc. of Gull Bay have extensive experience in forest management in Thunder Bay district. Kiashke was responsible for forest management planning on the Kiashke Unit and held harvesting licences. • Both the Mizhinawea and Niigaani organizations were represented on the Spruce River Forest Local Citizens Committee, while the Saugeen First Nation were represented on the Brightsand Local Citizens Committee.
96/97	• A First Nation participated as a representative on the Forest Management Planning Team. • Another First Nation was a participant in the Native consultation program, and prepared final Native Background Information Report and Native values map under contract from MNR. • One First Nation was an active member on a Local Citizens Committee, while another was a non-active member on a Local Citizens Committee.
97/98	• Red Sky Metis were advised of the Sustainable Forest Licence process that occurred between the MNR and the forest industry on the former Crown Management Unit. The community was encouraged to approach members of the Sustainable Forest Licence to discuss employment opportunities and access to silvicultural contracts.
98/99	• Whitesand First Nation is a member of the forest management planning team for the Armstrong Forest. Regular community meetings were held as part of the Native consultation process.
99/00	• Whitesand First Nation is a member of the forest management planning team for the Armstrong Forest. Regular community meetings were held as part of the Native consultation process. • Red Rock First Nation carried out silviculture work and participated as a member of the management planning team. • Several First Nations were contracted for, or completed, Native Background Information Reports and Native Values maps.
	Contracts
95/96	• Kiashke also undertook silviculture activities within its unit. • Niigaani was responsible for planning, road construction, cut layout and harvesting for its activities on the Spruce River Unit. • Saugeen First Nation had an allocation of timber in the Brightsand Forest for the previous five years; however, no harvesting took place.
96/97	• First Nations received contracts to plant 347,000 trees, collect 50 hectoliters of cones, and thin 50 hectares. • Forest companies discussed subcontracting opportunities for site preparation, tree planting, cone collection and tending programs with interested First Nations. • One Aboriginal business has an annual silviculture contract of over $100,000.

	• One First Nation has an annual silviculture contract of $90,000.
97/98	• Two forest companies are in negotiations with White Sand First Nation for harvest allocations, tree planting and silvicultural work.
98/99	• Whitesand First nation had a contract to harvest 70,000 cubic metres of wood for an overlapping license holder.
99/00	• Whitesand First Nation had a contract to harvest 70,000 cubic metres of wood for an overlapping license holder
	Licenses
96/97	• Two Aboriginal businesses hold overlapping Forest Resource Licences with annual allocations of over 135,000 cubic metres of wood. • One First Nation has an overlapping Forest Resource Licence for 31,000 cubic metres annually and a subcontract to harvest over 75,000 cubic metres of wood. • Discussions between Aboriginal communities and the forest industry continue to identify forest management opportunities.
97/98	• Saugeen First Nation continues to hold a harvest allocation of 17 hectares in the Brightsand Forest. • Whitesand First Nation has allocation areas set aside for future harvesting opportunities as a third-party operator on the Armstrong Forest.
98/99	• Lac Des Mille Lacs First Nation had an allocation to harvest 46,600 cubic metres of wood. • Whitesand First Nation had an allocation to harvest 278,000 cubic metres of wood.
99/00	• North Block and Niigaani Enterprises from Gull Bay First Nation were allocated a total of 233,000 cubic metes of wood. • Lac Des Mille Lacs First Nation had an allocation to harvest 46,600 cubic metres of wood. • The Black Bay Metis Association was also allocated 24,000 cubic metres and contracted to plant 131,000 trees. • Whitesand First Nation had an allocation to harvest 278,000 cubic metres of wood.
	Training, Recruitment and Employment
96/97	• A member of a First Nation attended a timber scaling course. • Fire suppression training courses were available to, and were attended by, First Nation members. • Two First Nations discussed with MNR and forest companies for bait fish and tourism opportunities.
99/00	• A student from the Whitesand First Nation was provided employment for the summer.

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Timmins District **Management Units including:** Romeo Malette Forest, Shiningtree Forest, Timmins Forest, Timmins	
First Nations or other Aboriginal communities situated within the District: Mattagami is the only First Nation in the district. Flying Post Reserve is also within the Timmins District boundary but all residents live off the reserve, mainly in Nipigon. Timmins District has attempted, in conjunction with Nipigon District, to establish contact with Flying Post First Nation.	
	Relationships and Participation
95/96	• The Mattagami First Nation was active in discussions regarding the Shining Tree Sustainable Forest Licence and the Romeo Malette Forest.
96/97	• The Mattagami First Nation was active in discussions regarding the Shining Tree Sustainable Forest Licence and the Romeo Malette Forest. • Two Aboriginal communities participated in Native consultation during the 1997 FMP preparation.
97/98	• Mattagami First Nation is in discussion on economic development opportunities on the Shiningtree Management Unit. The community has expressed interest in assigning a community member to participate as an active member on the local citizen committee and forest management planning team for the Shiningtree 2001 Forest Management Plan. • The Mattagami First Nation and the MNR are in early stages of discussing Native values mapping. • The Sustainable Forest Licence holder and Mattagami First Nation are in discussion on data sharing opportunities. The Sustainable Forest Licence holder funded Forest Resource Inventory mapping for the Mattagami First Nation. • Matachewan First Nation (located in Kirkland Lake District) participated briefly in the Native Public Consultation Process on the Timmins Forest Forest Management Plan.
98/99	• Mattagami First Nation is in discussion with the Sustainable Forest Licence holder on economic development opportunities on the Shiningtree Forest. • The Mattagami First Nation is an active member on the Local Citizens Committee, and on the Forest Management Planning Teams for the Shiningtree Forest and Romeo Malette Forest. • Matachewan First Nation has an active member on the planning team for the Timmins Management Unit.
99/00	• Mattagami First Nation has active members on the forest management planning teams for the Shiningtree and Romeo Malette 2001 Forest Management Plans, and the Matachewan First Nation has a member on the Timmins 2001 Forest Management Planning team. • A needs assessment meeting was conducted with the Mattagami First Nation as part of the Domtar First Nation Development Policy for Shiningtree Forest Inc. • Domtar Inc. has also held cultural awareness training sessions for its employees. • Discussions occurred with Mattagami First Nation regarding other relevant issues, including trapline management, nuisance beavers, and the establishment of a trappers council.
	Contracts
95/96	• Mattagami First Nation expressed interest in potential silviculture, harvesting, and hauling activities.
96/97	• A First Nation was interested in potential silviculture, harvesting, and hauling

	activities. • Another First Nation was contracted to carry out site preparation work worth $13,000.
97/98	• Mattagami First Nation had a pre-commercial thinning contract on the Shiningtree forest Management Unit. • A local forest company provided $130,000 in renewal and maintenance contracts to First Nations
98/99	• Pre-commercial thinning contracts and other forest management opportunities were reviewed. • Wahgoshig First Nation had a contract to harvest 2,557 cubic metres of wood.
99/00	• A pre-commercial thinning contract was offered to the Mattagami and Matachewan First Nations prior to being accepted by the Wahgoshig First Nation.
	Training, Recruitment and Employment
95/96	• Wahgoshig First Nation sought funding to hire a Resource Management Liaison person to provide contact with the Sustainable Forest Licence holder and MNR for forest-related employment opportunities for band members. • MNR was active in the Native Forestry Technician Program within this district.
96/97	• A graduate of the Aboriginal Forest Technician Program was hired by a First Nation to meet their resource management liaison requirements. • MNR made facilities and equipment available to the liaison officer to train 12 band members in forest technology. • Over 25 Aboriginal people from within the District were involved in provincial forest fire suppression activities. Fire fighting training was available to First Nation's members.
97/98	• Five community based fire crews were under contract to the Ministry of Natural Resources to provide provincial fire protection services. • Funding requests for heavy equipment operator training was deferred to 1998/99. • A First Nation member was sponsored to attend the Native Resource Technician program at Sault College. • MNR hired one Aboriginal technician to develop a partnership on the management of treaty traplines.
98/99	• Twelve community members received training and were certified as heavy equipment operators.
99/00	• The MNR district co-sponsored four co-op students in the Aboriginal Technician Program at Sault College and hired two summer forest technicians from the Mattagami First Nation. • Domtar Inc. also hired two summer students, and Tembec Industries Inc. hired one student for forest-related work.

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Wawa District **Management Units including:** Big Pic Forest, Black River Forest, Magpie Forest, Nagagami Forest, Wawa Forest, White River Forest	
First Nations or other Aboriginal communities situated within the District: Hornepayne, Michipicoten, and Pic Mobert. Discussions also take place with Pic River First Nation located adjacent to Wawa District but within the Big Pic Forest.	
	Relationships and Participation
95/96	• There was ongoing participation by First Nations in the management planning process.
96/97	• There was ongoing participation by First Nations in the forest management planning process. An Aboriginal community outside the District also participated. • MNR facilitated meetings between industry and First Nations for overlapping timber allocations.
97/98	• A community member was under contract to develop the Native Background Information Report and Native Values Map. • Pic Mobert First Nation has actively participated in forest management planning activities. • Pic River First Nation participated in the preparation of the White River Forest Management Plan. • A Pic River First Nation member was under contract to develop the Native Background Information Report and Native Values Map. • Discussions have been ongoing between the Sustainable Forest Licence holder, Pic River First Nation and the Pic River Development Corporation.
98/99	• The district contracted a community member in each Pic Mobert and Pic River First Nations to collect Native Values and background information for the Native Background Information Report and Native Values Map. • Pic Mobert First Nation actively participated in forest management planning activities.
99/00	• Pic Mobert First Nation actively participated in forest management planning activities. • MNR contracted a First Nation member to collect information for the Native Background Information Report and Values Map.
	Contracts
95/96	• Sustainable Forest Licence negotiations with James River Marathon resulted in five tree-planting jobs for First Nation workers and gave First Nations the first opportunity at these tree planting jobs. • MNR offered the Michipocoten First Nation a tree-planting contract on the Wawa Management Unit for 1996.
96/97	• Seasonal employment was provided through cone collection and tree planting contracts. • A logging contract to cut up to 87,000 cubic metres of wood was provided to two First Nations.
97/98	• A First Nation was contracted to plant 104,000 trees and to collect 54 hectoliters of tree cones.
98/99	• A First Nation was contracted to plant 104,000 trees and to collect 54 hectolitres of tree cones.

	Licenses
95/96	• Michipicoten First Nation was included as a licensee on the Wawa Management Unit with a five-year allocation. • MNR facilitated meetings between Domtar and Jager and First Nations for overlapping allocations of timber from the White River Forest, resulting in an allocation for the next three years. • Sustainable Forest Licence negotiations for the Big Pic Management Unit resulted in an annual allocation to the Pic River First Nation. • The Pic Heron Bay Development Corporation was allocated a Forest Resource Licence on the Black River Forest totaling 16,870 cubic metres.
97/98	• Michipicoten First Nation sought the purchase of a local sawmill and negotiated a wood allocation of 1000 cubic metres. • Pic Mobert First Nation negotiated a wood allocation of 4,666 cubic metres. • Pic River First Nation negotiated a wood allocation of 48,200 cubic metres. • The Pic Heron Bay Development Corporation was allocated a Forest Resource Licence on the Black River Forest totaling 16,870 cubic metres.
98/99	• Michipicoten First Nation has a wood allocation of 1,000 cubic metres for harvesting and purchased High Falls Lumber sawmill and secured a license to process its allocation. • Pic Mobert First Nation negotiated a wood allocation of 4,666 cubic metres. • Pic River First Nation had a wood allocation of 48,200 cubic metres for harvesting. • The Pic Heron Bay Development Corporation was allocated a Forest Resource Licence on the Black River Forest totaling 16,870 cubic metres.
99/00	• Michipicoten First Nation has an annual wood allocation of 1,000 cubic metres for harvesting. • The Pic Heron Bay Development Corporation was allocated a Forest Resource Licence on the Black River Forest totaling 16,870 cubic metres. • Pic River First Nation had a wood allocation of 48,200 cubic metres for harvesting. • Pic Mobert First Nation has a Forest Resource Licence of greater than 100 hectares in the White River Forest.
	Training, Recruitment and Employment
95/96	• MNR sponsored an Aboriginal Forest Technician and employed a First Nation member for one year to work on technology transfer. • Pic River First Nation has 22 residents employed in the Marathon Pulp Mill
96/97	• Up to 35 Aboriginal people have permanent jobs at a mill in Hornepayne. • Pic River First Nation has 22 residents employed in the Marathon Pulp Mill
97/98	• A First Nation member has been receiving training in forestry activities. • It is estimated that 35 Hornepayne First Nation members are employed in the forest sector. • Pic River First Nation has 22 residents employed in the Marathon Pulp Mill
98/99	• Hornepayne First Nation has an estimated 25 members employed in the forestry sector. • Pic River First Nation has 22 residents employed in the Marathon Pulp Mill
99/00	• Hornepayne First Nation has an estimated 25 members employed in the forestry sector. • Pic River First Nation has 22 residents employed in the Marathon Pulp Mill

1

Long-term Scientific Studies – Moose Habitat - T&C 80 and Appendix 19(1)

Current Requirement

Term and condition 80 and Appendix 19 (1) required MNR to undertake long-term scientific studies on moose habitat to assess the effectiveness of the Timber Management Guidelines for the Provision of Moose Habitat. The studies were to include an assessment of the efficacy of guidelines in providing moose habitat and recommend improvements to the guidelines.

> ***T&C 80***
>
> *MNR shall undertake long-term scientific studies to assess the effectiveness of the provincial guidelines for moose and fish habitat and tourism values. These studies shall include an assessment of the effects of current timber management practices on moose and other wildlife habitat, fish habitat and tourism values. Particulars of this condition are set out in Appendix 19.*

> ***Appendix 19(1): Provincial Level Monitoring: Long-Term Scientific Studies***
>
> *Timber Management Guidelines for the Provision of Moose Habitat*
> *The studies will:*
> *(a) assess the efficacy of the guidelines in providing moose habitat; and*
> *(b) recommend improvements to the guidelines.*

Progress Report

MNR initiated the Moose Guidelines Evaluation Project following an expert workshop process. This process resulted in two broad objectives: 1) to determine the effects of forest management practices such as road construction, harvesting, etc., on moose habitat and, 2) the effectiveness of the moose habitat guidelines in protecting key moose habitats. Although the original design suggested two or three study areas in different forest regions of Ontario, the study to date has been concentrated in one area of northwestern Ontario. Nevertheless, the Moose Guidelines Evaluation Project has collected more location and habitat information on moose than any similar study in the world.

The research directly associated with this project was divided into two major components, namely habitat analysis and moose life history. The habitat component pursued assessment and comparisons of capability and suitability. This difference is important since habitat could be capable of use by moose, but might not be suitable. For example, a young forest might be capable of providing cover, but would not be suitable until a conifer canopy developed. The life history component used a complementary population modelling approach. Modelling of the project was done at the outset for both components to help assess changes in habitat and populations in response to different forest management options. Both research components also had field studies to derive and test parameters and assumptions. Field research has been the focus of the Moose Guidelines Evaluation Project since 1993.

A major portion of field research was an intensive radio-tracking program. State-of-the-art satellite radio-collars were fitted to 60 free-ranging cow moose that were captured with net guns fired from helicopters. When moose were captured and subsequently re-captured, they were assessed for a variety of health parameters, such as parasite loads. This information, as well as the collection of blood, hair and fecal samples, was used to compare moose from different habitats. Satellite radio-collars identified the locations where moose were found throughout the seasons and the habitats they frequented. The unprecedented quality of the radio-tracking information provided researchers with information to identify areas where moose gave birth and raised their young, referred to as calving and nursery habitat.

Work in the Moose Guidelines Evaluation Project study area has led to more than a dozen scientific papers published in peer reviewed, refereed journals or conference proceedings; more than 30 internal MNR reports and research protocols; and, over 20 presentations/public meetings. Several of the presentations have been made to national and international audiences. See the Bibliography and Presentations referenced in this progress report for a complete listing of papers and presentations.

One published paper (Rempel et al. 1997) won a major international award for scientific excellence. This paper demonstrated that moose populations in the part of the study area logged by progressive clear-cutting, increased at a rate significantly higher than the moose population in the part of the study area logged following the Timber Management Guidelines for the Provision of Moose Habitat. The paper showed that access and the resultant hunting mortality played a greater role in controlling moose densities than did habitat.

The published papers and preliminary results of all the components of the study have made major advances in the understanding of moose use of forested habitats, including those special, fine scale habitats used by moose which are normally identified as values and managed with area of concern prescriptions (e.g., moose calving sites). Briefly, the findings of the Moose Guidelines Evaluation Project suggest the moose habitat guidelines required changes in relation to the following areas:

1. Moose calving and nursery habitats.
2. Moose aquatic feeding areas.
3. Forest road access strategies addressing hunting.
4. Clearcut size and configuration.

Research results showed moose used a wide variety of habitats to calve and raise young, and the exact place where young were born did not appear to be a habitat value that needed to be protected from harvest operations with an area of concern prescription. However, moose did appear to prefer riparian areas to calve and raise their young, suggesting residual cover habitat should be left near riparian areas. With respect to moose aquatic feeding areas, the study has suggested some harvesting in areas now protected would not be detrimental. Further work is ongoing which may provide better guidance as to classification of moose aquatic feeding areas. As previously stated, moose are very vulnerable to hunting from forest access roads. Unlimited road access by hunters reduces the capability of suitable habitat to produce moose.

A significant change to the present moose habitat guidelines, which has been recommended as a direct result of the research, is the use of a broad range of clear-cut sizes, including some larger than 260 ha. An unequivocal finding associated with this study is that some large clearcuts benefit moose. This conclusion is consistent with recommendations and the direction provided by the Forest Management Guide for Natural Disturbance Pattern Emulation.

A revision to the moose habitat guidelines will emphasize clear-cut configuration, provide targets as to the amount of residual cover associated with the harvest area, and quantify and describe the forest cover to be left adjacent to the harvest area. These changes would limit the size of the area that can be disturbed at the landscape scale, reduce the amount of forest fragmentation, and ensure there are patches of mature trees within the boundaries of the clearcut.

Formal review and revision of the Timber Management Guidelines for the Provision of Moose Habitat is now underway, incorporating the results of the Moose Guidelines Evaluation Project.

Synopsis

The Moose Guidelines Evaluation Project has met the requirements of T&C 80 and Appendix 19(1) by undertaking a long-term study on the effectiveness of the provincial moose habitat guidelines. The study has provided recommendations on how to improve the Timber Management Guidelines for the Provision of Moose Habitat as well as information used to help develop the Forest Management Guide for Natural Disturbance Pattern Emulation. The Moose Guidelines Evaluation Project has collected more information on moose use of forested habitats, using state-of-the-art satellite radio-tracking technology, than any other similar study anywhere.

Data analyses are expected to provide further information, which will be used to continue to provide moose habitat through the forest management planning process.

MNR is making recommendations regarding this term and condition in Section 3.2.2.4 Monitoring Guideline Effectiveness, of the Timber Class EA Review.

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Long-Term Scientific Studies – Fish Habitat - T&C 80 and Appendix 19(2)

Current Requirement

Term and condition 80 and Appendix 19(2) required MNR to undertake long-term scientific studies to assess the effectiveness of the Timber Management Guidelines for the Protection of Fish Habitat. The studies were to include an assessment of the effects of current timber management practices on fish habitat associated with lakes and streams in Ontario. Because fish habitat can be divided into its chemical (e.g., water quality) and physical (e.g., spawning substrate, fish populations) attributes, the term and condition specified a number of parameters to ensure both aspects of fish habitat would be investigated and measured. The studies were to recommend improvements to the Timber Management Guidelines for the Protection of Fish Habitat.

> ***T&C 80***
>
> *MNR shall undertake long-term scientific studies to assess the effectiveness of the provincial guidelines for moose and fish habitat and tourism values. These studies shall include an assessment of the effects of current timber management practices on moose and other wildlife habitat, fish habitat and tourism values. Particulars of this condition are set out in Appendix 19.*

> ***Appendix 19(2): Provincial Level Monitoring: Long-Term Scientific Studies***
>
> *Timber Management Guidelines for the Protection of Fish Habitat*
>
> *The studies will:*
> *(a) assess the efficacy of the guidelines in protecting fish and fish habitat;*
> *(b) investigate the relationship between forest cover manipulation and protection of fish habitat in the Ontario situation;*
> *(c) apply study treatments to both lakes and streams;*
> *(d) include the following measurements:*
> *(i) watershed mapping (e.g., boundaries of watersheds, lake bathymetry, forest mapping, fish spawning sites),*
> *(ii) stream water levels and flow,*
> *(iii) selected water quality parameters (e.g. phosphorus, temperature, dissolved oxygen, pH, alkalinity),*
> *(iv) turbidity and major ion composition,*
> *(v) sediments (e.g. substrate composition in spawning areas, downstream from road water crossings), and*
> *(vi) fish population characteristics; and*
> *(e) recommend improvements to the guidelines.*

Progress Report

Guidance provided through an expert workshop process suggested the research required by T&C 80 and Appendix 19(2) focus on coldwater lakes and streams. These were thought to be the fish habitat types most sensitive to environmental disturbance from forest management operations.

Two project teams were assembled to undertake the long-term research required for this project. One focused on lake ecosystems, and was known as the Coldwater Lakes Experimental Watersheds team. Their research has been carried out in one coldwater lake study site in northwestern Ontario, near Atikokan. The other team focused its research on stream ecosystems, specifically on coldwater streams in the vicinity of Thunder Bay. The Fish Habitat Comparative Aquatic Effects team undertook this study. Together, the two project teams operated under the umbrella of the Aquatic Effects Program.

The Aquatic Effects Program has developed numerous partnerships and contacts with external scientific experts, which have provided many benefits to the program, including enhanced scientific quality control, geographical relevance and advice on project management. For example, a partnership with the Sustainable Forest Management Network has allowed the Aquatic Effects Program to coordinate with the network's research activities related to aquatic environments in managed forests. This coordination has helped to ensure the Aquatic Effects Program complements, rather than duplicates, aquatic research undertaken by universities and government agencies in other parts of the Boreal Forest. An additional benefit of the Sustainable Forest Management Network is the enhanced opportunity for sharing research results.

The coldwater lakes study site is a number of small lakes with populations of lake trout, white sucker and several species of minnow. The lakes also contain hundreds of other aquatic plant and animal species. The main thrust of the experiment was to undertake intensive, pre-harvest monitoring (1991-1995) followed by at least five years of post harvest/forest operations data collection. Experimental harvesting was done mostly in 1996 following the direction provided by the Timber Management Guidelines for the Protection of Fish Habitat on one lake, with much more extensive cutting near other lakes and their catchments. Treatments associated with these other lakes included clearcut harvesting of areas which, under normal circumstances, would be areas of concern.

The stream research, which began in 1996, is based on a robust design, which considers natural variability in evaluating ecological impacts. A variety of streams with no impacts from forest operations served as a control. Similar to the coldwater lakes research design, the study incorporates opportunistic pre and post-harvest monitoring of other streams which were subjected to a variety of types and intensities of forest operations including different types of harvesting and site preparation. Impacts on the aquatic environment are measured at local and landscape scales.

To date, the Aquatic Effects program has resulted in the publication of more than 30 papers in the primary literature. Dozens of other reports, manuscripts and theses have also been published and many presentations of the work have been made to a wide array of audiences. See the Bibliography and Presentations referenced in this progress report for a complete listing of papers and presentations.

With respect to the measurements described in Appendix 19(2), all, and many more, have been conducted. Briefly, a summary of some of the preliminary results of the studies is as follows:

1. Extensive clearcutting and site preparation to lake shores have not resulted in harmful physical, chemical or biotic impacts.
2. Physical and geochemical responses of upland areas and small streams as a result of forest operations are significant. This was especially true of streams that do not appear

on 1:50,000 topographical maps, the standard map used to identify waterbodies where the Timber Management Guidelines for the Protection of Fish Habitat are to be applied.

3. Very small unmapped streams were physically damaged during harvest operations, and showed detrimental physical and biological changes.
4. The direction provided by the Timber Management Guidelines for the Protection of Fish Habitat, especially with respect to lake shorelines, is likely overly conservative, providing for greater protection through area of concern prescriptions than is required to protect a fish habitat value. For example, reserves along lakeshores are often wider and extend over more of the total shoreline, than required to protect against harmful impacts such as erosion.

MNR has also learned that there are many caveats associated with the conclusions of these studies. For example, the studies found new evidence of ecological linkages between lakes and forest ecosystems, which, in general, are poorly understood, suggesting the results from the studies may not be fully applicable elsewhere. Therefore, while the effects of timber management on lakes are much less than was anticipated, and the Timber Management Guidelines for the Protection of Fish Habitat in general provide more than enough protection to be effective in minimizing these impacts, care will be taken when applying a more liberal prescription than that suggested by the present guidelines.

Synopsis

While the Timber Management Guidelines for the Protection of Fish Habitat appear to have been effective at protecting lakes from potentially harmful impacts associated with forest management activities, they did not provide the safeguards required to protect fish habitat associated with small, unmapped streams. The research found evidence of physical, geochemical and biological impacts on some small streams, which did provide fish habitat.

Formal review and revision of the Timber Management Guidelines for the Protection of Fish Habitat is now underway, incorporating the results of the Aquatic Effects Program studies.

MNR is making recommendations regarding this term and condition in Section 3.2.2.4 Monitoring Guideline Effectiveness, of the Timber Class EA Review.

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Long-Term Scientific Studies – Tourism Values - T&C 80 and Appendix 19(3)

Current Requirement

Term and condition 80 and Appendix 19(3) required MNR to undertake long-term scientific studies to assess the effectiveness of the Timber Management Guidelines for the Protection of Tourism Values. The studies were to include an assessment of the efficacy of the guidelines by sampling tourism operations in Northern Ontario and were to recommend improvements to the guidelines.

> ***T&C 80***
>
> *MNR shall undertake long-term scientific studies to assess the effectiveness of the provincial guidelines for moose and fish habitat and tourism values. These studies shall include an assessment of the effects of current timber management practices on moose and other wildlife habitat, fish habitat and tourism values. Particulars of this condition are set out in Appendix 19.*

> ***Appendix 19(3): Provincial Level Monitoring: Long-Term Scientific Studies***
>
> *Timber Management Guidelines for the Protection of Tourism Values*
>
> *The Studies will:*
> *(a) assess the efficacy of the guidelines by sampling tourism operations in Northern Ontario (e.g. remote mainbase lodges, accessible mainbase lodges, outpost camps); and*
> *(b) recommend improvements to the guidelines.*

Progress Report

Prior to undertaking this study, MNR held a workshop to seek advice from tourism experts on how to proceed. These experts acknowledged the difficulties associated with quantifying and qualifying the broad-range of tourism values, attitudes, perceptions and behavioural intentions of resource-based tourists. The workshop resulted in a project design, which was subsequently modified to include an adaptive management approach. The Tourism Effects Research Unit lead the research.

The complexity of the subject made it difficult to conduct both quantitative and qualitative research. To help focus its efforts, the unit established four primary objectives: 1) identify important tourism values; 2) determine the effects of forest management on the tourism industry; 3) determine the effectiveness of the Timber Management Guidelines for the Protection of Tourism Values; and, 4) understand how and why road-based recreationists impact resource-based tourism values.

Research on tourism interests and values was undertaken using a number of mail and on-site surveys and angler creel diaries. Effects of forest management on the tourism industry were examined by a comprehensive questioning of tourist operators. The effectiveness of the tourism guidelines was assessed by examining how well the forest management planning process protected tourism values. The potential conflicts between road access and remote tourism were assessed through the use of a number of specific, stated preference studies focused on fishing and hunting activities. By understanding the behavioural choices of road-based recreationists, potential conflicts between those recreationists and tourists staying at remote, fly-in establishments, could be identified and predicted.

Initially, fly-in fishing was a major focus of the research because of concerns associated with forest operations and the fact that this is also a major part of Ontario's resource-based tourism industry. The research has been expanded to include other resource users directly impacted by forest operations, for example attempting to gauge attitudes of resident anglers and hunters to road use strategies.

To date, the research has resulted in 12 publications accepted or submitted to refereed journals, two book chapters, two graduate theses, 11 technical reports and more than 30 papers and presentations associated with various meetings, conferences and workshops. See the Bibliography and Presentations referenced in this progress report for a complete listing of papers and presentations.

The expert workshop concluded that an evaluation of the effectiveness of the Timber Management Guidelines for the Protection of Tourism Values would not be feasible because of the absence of testable standards in the tourism guidelines. However, research by the Tourism Effects Research Unit successfully tested and documented the effects of forest management on resource-based tourism in general.

Some of the works accomplished by the unit are as follows:

1. Establishing the importance of remoteness as well as other resource-based tourism values, for example, the quality of the fishing experience, to potential and visiting tourists.
2. Assessing factors, including forestry operations and natural disturbance, that underlie the aesthetic evaluations that tourists and recreationists derive from shoreline forests.
3. Developing the Northern Ontario Decision Support System which predicts the destination choices of tourists for hypothetical tourism destinations that are described by the environmental characteristics in the vicinity of the establishment (including roads, and harvest blocks) and by the type of tourism establishment (Advanis 1999).

The Tourism Effects Research Unit provided recommendations and advice to the provincial team revising the Timber Management Guidelines for the Protection of Tourism Values. Research is on-going, including studies which are attempting to determine the impacts of forest management activities on road-based tourism establishments.

This research, together with the practical experience of MNR, the tourism industry and the forest industry, has found that many of the issues associated with protecting tourism values are social and business values affiliated with a natural resource feature. These issues require local business-to-business solutions rather than a predetermined, standard prescription found in a guideline. This has lead MNR to facilitate discussions between the tourism and forest industry resulting in a new process by which local business-to-business arrangements are developed in the form of a Resource Stewardship Agreement. These agreements are currently being developed across the province, and the results will be considered in the preparation of FMPs.

Synopsis

The consensus of the expert workshop was that it would be very difficult to assess how well the Timber Management Guidelines for the Protection of Tourism Values protected the tourism values of Northern Ontario tourist operators. However, it was possible to determine effects on tourism from forest operations and to identify how the forest management planning process worked in addressing tourism values. The knowledge gained from the research was provided to the team involved in crafting the newly revised tourism guidelines Management Guidelines for Forestry and Resource-based Tourism and associated documents, such as Tourism and Forest Industry – Memorandum of Understanding. The end result is a better understanding of the inter-relationships between tourism and forest operations in Northern Ontario and an improved process to allow both industries to bring forward business-to-business solutions for consideration in forest management planning.

MNR is making recommendations regarding this term and condition in Section 3.2.2.4 Monitoring Guideline Effectiveness, of the Timber Class EA Review.

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Long-Term Scientific Studies – Other Wildlife - T&C 80 and Appendix 19(4)

Current Requirement

Term and condition 80 and Appendix 19(4) required MNR to undertake long-term scientific studies on the habitat of wildlife species other than moose. The studies were to assess the efficacy of the Timber Management Guidelines for the Provision of Moose Habitat, as well as timber management practices not in those guidelines, in providing habitat for those other wildlife. The studies were to recommend improvements to the appropriate implementation manuals or the development of new implementation manuals.

T&C 80

MNR shall undertake long-term scientific studies to assess the effectiveness of the provincial guidelines for moose and fish habitat and tourism values. These studies shall include an assessment of the effects of current timber management practices on moose and other wildlife habitat, fish habitat and tourism values. Particulars of this condition are set out in Appendix 19.

Appendix 19(4): Provincial Level Monitoring: Long-Term Scientific Studies

Other Wildlife

The studies will:
- *(a) assess the efficacy of the Timber Management Guidelines for the Provision of Moose Habitat in providing habitat for other wildlife species;*
- *(b) assess the efficacy of timber management practices other than those described in the Timber Management Guidelines for the Provision of Moose Habitat in providing habitat for other wildlife species; and*
- *(c) recommend modifications to appropriate implementation manuals or the development of new implementation manuals.*

Progress Report

MNR's initial step to implement the studies required for T&C 80 and Appendix 19(4), was to create a science framework to articulate the objectives for the research proposal. Under the auspices of the Wildlife Working Group, which consisted of scientists and biologists from within and outside MNR, a proposal was prepared that stated the objective of the research was "to compare the response of wildlife (as measured by population levels, species diversity, etc.) at multiple temporal and spatial scales, to landcover originating from disturbance caused by natural processes and from timber management practices" (Wildlife Working Group 1995).

Two hypotheses are identified in the research proposal. The first states that forest management practices create patterns of forest structure and composition across temporal and spatial scales that do not differ from structure and composition created by natural disturbance.

To test the first hypothesis, the forest patterns in a managed forest, as compared to a natural forest, were examined at three scales: (1) a fine scale, within a stand; (2) a local scale, as part of a management unit; and (3) a landscape scale, such as an entire management unit. In accordance with Appendix 19(4), research focused on this hypothesis could simultaneously examine how direction provided by the moose habitat guidelines affected forest patterns, as well as how other types of forest practices affected forest patterns (e.g., partial harvest, harvest around advanced regeneration, etc.).

The second hypothesis stated that there are no differences in wildlife populations between managed and naturally disturbed systems. The assumptions were that if a natural forest could not be differentiated from a managed forest on the basis of pattern or structure, then it was unlikely the habitats of wildlife between the two forests would differ. Only forests of similar age were compared. That is, young forests regenerating after fire were compared to young forests following harvest operations.

The second hypotheses would only need to be tested if it could be proven natural forests were different in pattern and structure than managed forests.

To pursue the testing of the first hypothesis, a project team was assembled. Their work resulted in the following:

1. Tools, mainly computerized models, were developed to assess landscape patterns.
2. New interpretive maps were prepared (e.g., a provincial landcover map based on satellite, Landsat imagery).
3. Analyses was undertaken of the amounts of woody debris and other measures of internal forest structure at a fine scale in areas disturbed by natural forces, areas subject to partial harvesting and areas which were clear-cut.
4. A comparison was made of forest patterns created by logging and natural disturbances in two of MNR's administrative regions (the relatively humid Northeast Region and the drier Northwest Region). In this study, patterns were examined for differences separately within each region, as well as pattern differences between the two regions.

One model resulting from this work and the related research under T&C 107, which required MNR to examine wildlife habitat supply modelling methodologies and landscape management methodologies, was a spatial pattern analysis tool known as Patch Analyst (Elkie et al. 1999b). Further work has resulted in development of new programming tools and models (i.e., Landscape Scripting Language and the Cut Pattern Assessment Tool, respectively) which will allow for much faster habitat pattern analyses in a spatial, multi-scale environment.

With Patch Analyst, forest patch pattern objectives can be set at different scales and the patterns, which arise from harvest operations, can be evaluated against the set objectives. Landscape Scripting Language, an extremely fast and versatile software program, holds the promise of allowing MNR to test forest patch patterns against the habitat needs of numerous wildlife species. It will also help design field sampling programs to confirm the model predictions. The Cut Pattern Assessment Tool, a compilation of Landscape scripting language scripts, can be used to analyze natural forest patterns against which FMPs and their resultant patterns can be assessed.

The research conducted and the results produced strongly indicated harvesting changes forest patterns and structure relative to natural patterns and structure. This conclusion is also supported by research done under T&C 107. Forest patterns that resulted from harvesting were found to be more homogeneous in both shape and size than patterns arising from natural disturbances. Inter-patch distances (i.e., the distance between disturbances) were also more regular in managed forest than in forests with only natural disturbances.

As a result of these conclusions, and the results coming from research associated with T&C 80(a), Appendix 19, (1) (moose guideline effectiveness), the project team has recently begun to investigate forest vertebrate responses to changes in forest structure. Four projects have been initiated, focusing on songbird habitat. These research initiatives, in their early stages, have strong linkages and have formed partnerships with other MNR programs (e.g., the Provincial Wildlife Assessment Program) as well as with other agencies, such as the University of Guelph.

These studies have resulted in a large number of publications and communication products See the Bibliography and Presentations referenced in this progress report for a complete listing of papers and presentations.

The pattern and structure of the forest resulting from the application of the moose habitat guidelines impacts on a large number of species. Research examining the moose habitat guidelines has contributed to MNR's move toward natural disturbance pattern emulation. This emphasis on emulating natural disturbances is expected to benefit other wildlife, in addition to moose. One of the significant changes in this new approach will be an emphasis on the management of habitat attributes at the stand, site and landscape level. This initiative is explained more fully in the implementation record for T&C 93, Implementation Manuals.

Synopsis

MNR has created a science framework to test hypotheses associated with T&C 80 and Appendix 19(4). MNR based its research on the assumption that changes in forest habitat patterns and structure, from a fine to a landscape scale, would have an impact on other wildlife, in addition to moose. MNR has assessed the effects of using the Timber Management Guidelines for the Provision of Moose Habitat and other forest management practices on a wide array of wildlife by creating models that could examine forest patterns at different scales.

Models such as Patch Analyst, Landscape Scripting Language and Cut Pattern Assessment Tool provide forest planners with multi-scale, landscape assessment models to explore alternative harvest patterns.

This research and these new models have been used in support of improvements to implementation manuals and forest management planning.

MNR is making recommendations regarding this term and condition in Section 3.2.2.4 Monitoring Guideline Effectiveness, of this Timber Class EA Review.

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Wildlife Population Monitoring - T&C 81

Current Requirement

During the EA hearings, MNR presented a 'featured species' approach to wildlife habitat management. The underlying assumption behind the featured species approach is that it ensures forest habitat is available for the selected or featured species as well as other species with similar needs. It assumes that if a small number of featured species is managed for, representative of various forest conditions, the habitat requirements, and hence populations, of most species will be addressed.

At the time of the EA Approval, the provincially featured species in Ontario were moose in the boreal forest, and white-tailed deer in the Great Lakes-St. Lawrence forest, as well as those species listed as threatened or endangered with extinction.

MNR relies on the Committee on the Status of Species at Risk in Ontario to identify species that are threatened or endangered with extinction. Any species listed as threatened or endangered is managed as a provincially featured species only in those management units where those species are found, or might reasonably be expected to be found. In addition to the MNR featured species and the Committee on the Status of Species at Risk in Ontario listing, T&C 94 added two additional species - pine marten and the pileated woodpecker- as provincially featured species. This addition was made by the EA Board to ensure that forest management planning and implementation considered the needs of wildlife species requiring old growth forest characteristics.

As outlined in T&C 81, MNR was required to develop and implement a Provincial Wildlife Population Monitoring Program. This program was designed to monitor population trends associated with the four provincially featured species guidelines that were either available at the time of the EA Approval or in various stages of preparation. In addition, it required MNR to monitor other wildlife species with specialized habitat requirements, which potentially were not addressed by those four guidelines.

T&C 81

MNR shall develop and implement a Provincial Wildlife Monitoring Program within the Area of the Undertaking. This program will monitor population trends of representative terrestrial vertebrate species. Those species include:

(a) species which benefit from application of the Timber Management Guidelines for the Provision of Moose Habitat and/or the Timber Management Guidelines for the Provision of White-tailed Deer Habitat (in preparation);
(b) species which benefit from application of Timber Management Guidelines for the Provision of Pine Marten Habitat (pursuant to Condition 94(c)) and/or the Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat (pursuant to Condition 94(c)); and
(c) species which utilize the following habitat types and features: snags, dead and downed woody material, riparian areas, mature/overmature stands, and large areas in a similar successional stage.

Progress Report

For the purpose of wildlife population monitoring, MNR created, under the direction of the Provincial Terrestrial Assessment Program, Wildlife Assessment Units that are located across the province, in MNR's three administrative regions. The overall goal of the Wildlife Assessment Program is to identify and assess population trends of selected Ontario wildlife species that may be affected by forest management practices, and to facilitate understanding of why populations may be changing.

To achieve its stated goals, the Wildlife Assessment Program established several operating objectives. These included: designing a framework for monitoring selected wildlife species, including those species identified as vulnerable, threatened or endangered with extinction; providing an early-warning system to identify wildlife populations which might be significantly declining; and collecting, assessing and analyzing information to establish linkages between wildlife habitat and populations.

A total of 92 species were originally selected to be the focus of the monitoring program. Of these, 85 were recommended by experts at a workshop as direct indicators of sustainable forest management. These species operate at a variety of scales, namely landscape, forest and stand scales, and at different levels of the food chain. These species include carnivores, insectivores, herbivores and omnivores.

The remaining seven species were added by MNR. While these additional species might be adversely affected by particular forestry activities, they were not considered to be broadly indicative of the overall health of the forest. Four of the seven species are considered riparian species, while the remaining three are carnivores with large home ranges and less defined habitat requirements. Collectively, these 92 species represent all categories of species designated for monitoring by T&C 81.

To date, the wildlife population-monitoring framework has not been fully implemented as originally designed by MNR.

There are a number of species-specific monitoring programs in place that contribute to the overall wildlife population monitoring framework. These programs include: bird migration monitoring, nocturnal owl surveys, red-shouldered hawk and woodpecker surveys, amphibian call counts and roadside surveys, trapper surveys, forest bird surveys, salamander surveys, small mammal surveys, wolverine surveys, piping plover survey, peregrine falcon surveys, and Project Feeder Watch.

Many of these monitoring programs are being delivered through various partnership arrangements (e.g., Canadian Wildlife Service, Bird Studies Canada). Through many of these monitoring programs, relevant species population data are being accumulated on a local, regional and provincial scale. Partners involved in the wildlife assessment program often produce annual reports updating population trends, while others publish these data on the Internet.

The State of the Forest Report, 2001, in indicator 2.2.6 Selected Wildlife Species Population Trends, reported on wildlife population trends that have been examined and that have linkages to T&C 81. Data are presently available for certain bird species, based on various annual surveys as have been mentioned. For example, red-shouldered hawk surveys show that the number of red-shouldered hawks and turkey vultures fluctuated annually between 1991 and

2000, while nocturnal owl survey results showed boreal owl populations in northern Ontario differed among years. Bird migration monitoring surveys at Long Point and Thunder Cape indicate there have been declines in the numbers of some species, including species selected for monitoring by T&C 81, such as the chestnut-sided warbler. However, some other species, also selected for monitoring, such as the yellow-bellied sapsucker and black-throated blue warbler, increased.

The Breeding Bird Survey and the Forest Bird Monitoring Program, both volunteer based surveys, also provide information which shows some species to be increasing, while others are decreasing.

Together, data from the various sources and surveys indicate forest bird populations are relatively stable. The information shows some populations have increased while others have decreased. The change in the population of some other species has been negligible.

MNR recognizes that wildlife populations fluctuate as a result of many factors. For example, predation, weather, hunting, habitat and disease can all contribute to wide ranging natural variation in many wildlife populations. The contribution of each of these factors varies with species, time and location. Ontario has been collecting population data for many species for up to 10 years, however, population trends may not become evident until there has been many more years of data collection.

One of the inherent challenges associated with implementing the wildlife population-monitoring program relates to the difficulty in designing surveys for some species and groups of species. Methods to assess population levels of many species simply do not exist and efforts to use and test some methodologies have had mixed results. The wolverine survey, for example, gathers information from trappers and also relies on innovative baiting and photography techniques to verify the presence of this species. However, it is not yet possible to apply this information to gauge actual wolverine populations.

The science of wildlife population monitoring is continuing to evolve. Challenges associated with wildlife population monitoring are being addressed. MNR is currently undertaking a program review to rationalize wildlife population monitoring priorities. In addition, MNR has launched an Inventory, Monitoring, Assessment and Reporting initiative. This initiative has begun with a comprehensive review of MNR's monitoring and reporting programs. The review findings will then be used to redesign inventory, monitoring, assessment and reporting programs to achieve integration, efficiencies and improve program effectiveness.

These efforts will assist in linking the wildlife population monitoring with other ecologically based monitoring programs.

The State of the Forest Report, 2001, includes discussion under the element 1.3 Conserving Species Diversity in Ontario's Forests regarding forest-dependent species at risk and forest-dependent featured species. With the exception of woodland caribou and wolverine, habitat concerns for forest–dependent species at risk are not apparent in the Area of the Undertaking. Population or habitat concerns are not apparent for the four forest-dependent provincially featured species, namely moose, white-tailed deer, pine marten and pileated woodpecker.

A number of forest-dependent species can be identified as locally featured species for the purposes of forest management planning. These species represent features or concerns at the MNR district or management unit level and are designated by the MNR District Manager.

Locally featured species also include forest–dependent species designated by the Committee on the Status of Species at Risk in Ontario as 'vulnerable', now referred to as species of special concern. In the Area of the Undertaking, many species which have been identified in an FMP as a locally featured species include species which were selected for population monitoring by MNR.

Synopsis

MNR has developed a provincial wildlife monitoring program and has implemented a number of methodologies to ensure the population trends of the species identified in T&C 81 are monitored.

Several population-monitoring programs are presently being done in partnership arrangements. Data from the various sources and surveys indicate forest bird populations are relatively stable. The information shows some populations have increased while others have decreased. The change in the population of some other species has been negligible.

In general, these programs do not as yet provide long-term wildlife population trends, due to the many years of data required before trends become evident and the wide range of natural variation which occurs in many wildlife populations.

Co-ordination of the wildlife assessment program activities with the broader Inventory, Monitoring, Assessment and Reporting initiative is underway.

MNR is making recommendations regarding this term and condition in Section 3.2.2.3 Wildlife Population Monitoring, of the Timber Class EA Review.

Implementation Manuals - T&C 93

Current Requirement

The EA Board recognized implementation manuals as guidelines "…to direct and guide MNR and the industry's foresters and other professional and technical management staff in carrying out timber management planning" (Koven and Martel 1994, Page 285). They provide guidance and direction in a way that allows for consistency and accountability in decisions made by forest managers. They are intended to provide a source of relevant scientific information and are required to be regularly reviewed and updated by qualified people. The Provincial Forest Technical Committee, referred to in Section 3.5.1.2, is to have an integral role in reviewing the manuals and in setting priorities for manual revision, amalgamation or creation. The implementation manuals that were considered part of the timber management planning process and therefore applicable to T&C 93 were listed in Appendix 7 in the EA Approval.

T&C 93

(a) Within five years of this approval, and thereafter at least every five years, MNR shall review each implementation manual to determine the need for revision or amalgamation of the existing manuals or preparation of any new manuals. The Provincial Technical Committee shall have an integral role in the review of existing implementation manuals, and the setting of priorities for revision or amalgamation of the existing manuals or preparation of any new manuals which may be required from time to time.

(b) Any revision or amalgamation of the existing implementation manuals, or preparation of any new manuals shall be undertaken by suitably qualified persons.

(c) The intent of the review of the manuals is to ensure that they reflect current scientific knowledge as it applies to Ontario. In considering the need for revisions, amalgamations or new manuals, in setting priorities, and in determining the appropriate contents of the manuals, the following factors shall be considered:

- *(i) the results of applicable scientific research;*
- *(ii) the results of monitoring programs described in Conditions 55, and 78-84;*
- *(iii) the advantages and disadvantages of changes to current timber management practices; and*
- *(iv) advances in analytical and operational technology.*

(d) Where existing manuals are revised or amalgamated, or new manuals are prepared, draft manuals shall be subject to review by appropriate government ministries and agencies, known provincial organizations and associations with expertise in the subject matter, and representatives of Local Citizens Committees prior to finalization and approval by MNR.

Progress Report

The review, revision, amalgamation and preparation of MNR's implementation manuals, in accordance with T&C 93, is outlined separately in the following three sections.

Implementation Manual Review

The requirement of T&C 93 for MNR to undertake a review of each implementation manual by suitably qualified persons was completed by 1999. The Provincial Forest Technical Committee has had an integral role in the periodic review of the forest management implementation manuals, including guidelines, and in setting priorities for revision, amalgamation and preparation of new manuals. While committee members may be involved in a review, most often reviews are conducted by individuals outside the committee who have the necessary qualifications, expertise and experience. MNR staff form the core of this team, with people from other ministries, agencies and institutions included where appropriate.

For example, an MNR District wildlife biologist familiar with the habitat requirements of moose was asked to review the Timber Management Guidelines for the Provision of Moose Habitat. Two regional science staff with expertise in wildlife biology, specifically raptors, were asked to review the bald eagle, heron and osprey guidelines. Staff in MNR's Forest Management Branch, with responsibilities concerning the provincial coordination of and advice regarding the use of pesticides, are reviewing the Aerial Spraying For Forest Management manual. An individual from MNR's Fish and Wildlife Branch led the review of the Timber Management Guidelines for the Protection of Fish Habitat, which included participation from other organizations, such as the forest industry, the Ministry of the Environment and the federal Department of Fisheries and Oceans.

The main criteria used when considering a guideline revision include:

- the currency of scientific knowledge on which the guideline is based;
- the results of relevant monitoring programs, including effectiveness, effects, compliance and exceptions monitoring;
- advantages and disadvantages of changes to current forest management practices;
- advances in analytical and operational technology affecting the application of the guideline;
- recommendations and suggestions from independent forest audits;
- suggestions from forest reviews from other agencies;
- comments and suggestions from forest managers who have implemented the guideline; and
- compatibility with other related policy documents, strategic directions, etc.

The results of the reviews are considered in setting priorities for subsequent revisions, amalgamations or the preparation of new guides.

The criteria for reviewing the implementation manuals are consistent with the closely related direction provided by T&Cs 55 and 78-84 and 101. For example, T&C 80 directed MNR to undertake long-term scientific studies, which would result in recommended improvements to appropriate implementation manuals or the development of new implementation manuals, for example, the provincial guidelines for moose habitat, fish habitat and tourism values. T&C 55 requires FMPs to discuss monitoring provisions of management practices that are exceptions to recommendations in implementation manuals. Examples of exceptions monitoring currently being conducted includes monitoring of full-tree harvest and chipping in MNR's Northwest Region and the exceptions monitoring of forest operations that are closer than 400 m to a bald eagle nest. These exceptions monitoring programs are still on-going, the results of which may provide valuable information in future implementation manual reviews.

The Provincial Forest Technical Committee provides technical advice to MNR regarding planning, scheduling and overseeing various reviews, the results of these reviews and the subsequent revisions if required.

After the completion of the initial review of all guidelines by 1999, the efficient and effective application of implementation manuals continued to receive considerable attention from practitioners and stakeholders. As a result, the Provincial Forest Technical Committee agreed to draft a terms of reference for a review of all the forest management implementation manuals, or guidelines. The purpose was to examine ways to improve efficiency and effectiveness; reduce redundancy; and address practitioner concerns that there are too many guidelines. This followed the announcement of Ontario's Living Legacy Land Use Strategy and the subsequent signing of the Ontario Forest Accord, which indicated the need for an expeditious, transparent and independent review of the forest management guidelines. In 1999, MNR undertook an independent review of forest management guides, as described under the sub-heading Independent Review of Forest Management Guides, below.

Implementation Manual Revision, Amalgamation and Preparation

When revising, amalgamating or preparing a new implementation manual, a writing team is assembled which includes MNR staff, and depending on the nature of the implementation manual, may also include technical experts from outside MNR.Members of the Provincial Forest Technical Committee identify potential members for the writing team. When creating a draft, members of the writing team consult with selected individuals with recognized expertise in the subject of the implementation manual, and with appropriate members from the Provincial Forest Technical Committee. The writing team will review previous recommendations and action plans from independent forest audits, results of scientific research, and results of any relevant exceptions monitoring programs when developing the content.

The writing team keeps the Provincial Forest Technical Committee informed of progress made in revising, amalgamating and preparing implementation manuals. The committee reviews all drafts before proceeding with broader peer review.

Peer review of draft material is done by MNR staff and representatives from the forest industry, environmental non-government organizations, appropriate government ministries and agencies, other interested and affected parties, and members from Local Citizens Committees. Other public consultation forums may also take place, such as workshops. Public comments are considered in the finalization of the guide. The final draft is submitted to the Provincial Forest Technical Committee for review, and in some cases, submitted to the Provincial Forest Policy Committee for comment or for information. Subject to the *Environmental Bill of Rights* requirements, appropriate posting of notices of proposed implementation manuals and decision notices occurs on the Environmental Registry.

Closely related terms and conditions that required the preparation and/or revision of several implementation manuals include T&C 27 (a) and T&C 94 (a), (b), (c) and (d). Some of these implementation manuals were to be produced or revised within a specific timeframe, thus influencing the priority setting for implementation manual review and revision.

The first priority was T&C 94(c), which required the development of new featured species guidelines for marten and pileated woodpecker habitat within two years of the EA Approval. Both the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat and the Forest Management Guidelines for the Provision of Marten Habitat were approved in May 1996, and published copies of the guidelines were released in the autumn of 1996. See the progress report for T&C 94(c) Marten and Pileated Woodpecker Habitat Guidelines for more information.

Term and condition 94(a) required the review and revision of all five existing silvicultural guides within three years of the EA Approval. The five guides were amalgamated into three guides. Version 1.0 of each of the three new silvicultural guides was completed in May 1997 and Version 1.1 of the guides was published in 1997 and 1998.

Term and condition 94(d) required MNR to prepare a mixedwood silvicultural guide with the assistance of the Provincial Forest Technical Committee. Boreal mixedwood notes have been, and continue to be developed, which will provide the scientific background and context for the information to be included in the boreal mixedwood silvicultural guide, scheduled for completion in 2003. See progress report for T&C 94(a) and (d) Review and Revision of Silvicultural Guides; Boreal Mixedwood Guide Development, for more information.

Term and condition 27(a) and T&C 94(b) are two linked terms and conditions that required the development of an implementation manual to address forest management operational considerations related to the protection of the physical environment and to provide direction in relation to harvest layout, configuration and clearcut size. MNR developed the implementation manual in two parts: 1) the Forest Management Guidelines for the Protection of the Physical Environment was released in 1997; and 2) the Forest Management Guide for Natural Disturbance Pattern Emulation was released in November 2001. See progress report for T&C 27(a) & 94(b) Environmental Guidelines, for more information.

During the term of the EA Approval, work on other implementation manuals, not identified by T&C 27(a) and 94, continued. The review of implementation manuals influenced the priority setting of manual revision. Revised manuals and final draft manuals that have been produced since the EA Approval include:

- The Hawk Guide for MNR Field Personnel was updated and released as Forest Raptors: Their Nests in Central Ontario, in 1998.
- A new Selected Wildlife and Habitat Features: Inventory Manual was completed and released in 1998.
- A draft version of the Habitat Management Guidelines for the Protection and Conservation of Peregrine Falcon Habitat was prepared in 1998.
- A final draft guideline, Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach was completed and released in 1999.
- The Forest Management Guidelines for the Provision of White-tailed Deer Habitat was completed and released in 1997.
- The Prescribed Burn Planning Manual was revised and released in 1997.
- The Timber Management Guidelines for the Protection of Tourism Values was revised as the Management Guidelines for Forestry and Resource-Based Tourism and published in 2001.

For the following implementation manuals, revisions are underway as a result of the implementation manual review process:

- Aerial Spraying for Forest Management (review commenced in 1995).
- Timber Management Guidelines for the Provision of Moose Habitat (review commenced in 1998). See progress report for T&C 80 Appendix 19 (1) Long-term Scientific Studies – Moose Habitat for more information.
- Timber Management Guidelines for the Protection of Fish Habitat and the Code of Practice for Timber Management Operations in Riparian Areas (review commenced

concurrently in 1998). See progress report for T&C 80 Appendix 19 (2) Long-term Scientific Studies – Fish Habitat for more information.

- Environmental Guidelines for Access Roads and Water Crossings (review commenced in 1998).
- Timber Management Guidelines for the Protection of Cultural Heritage Resources (review commenced in 1998).
- Management Guidelines and Recommendations for Osprey in Ontario (review commenced in 2000).
- Management Guidelines for the Protection of Heronries in Ontario (review commenced in 2000).
- Bald Eagle Habitat Management Guidelines (review commenced in 2000).

Independent Review of Forest Management Guides

The use of implementation manuals has evolved over the last 25 years, as has the knowledge of forest management. New guidelines have been developed to address specific issues as they arise, adding to the number of guidelines over time. Forest management planning teams now have more than 30 implementation manuals to consider as they prepare and implement their plans.

This has resulted in a set of guidelines that in some cases, reflects outdated philosophies with considerable overlap, some gaps and many inconsistencies. As a whole, the set of documents is seen as being cumbersome and inefficient to use, and appear at times to be unrelated to the values they were intended to protect. The complexity of balancing the different, sometimes contradictory, direction in the many guidelines has created planning and implementation issues and a lack of integrated direction. Using the guidelines in their current form is a time-consuming and inefficient process (Arborvitae Environmental Services Ltd. et al. 2000, Page xi). The forest industry is concerned that too much wood is unavailable for harvest as a result of the overly conservative and overlapping guidelines, while the environmental community is concerned that some values may not be receiving the protection they deserve.

After considerable discussion by the Provincial Forest Technical Committee on how best to address these viewpoints and concerns, a review of all the forest management implementation manuals was initiated to examine ways to improve their efficiency and effectiveness, reduce redundancy, and address practitioner concerns that there are too many guidelines. This followed the announcement in 1999 of Ontario's Living Legacy: Land Use Strategy and the subsequent signing of the Ontario Forest Accord, which also indicated the need for an expeditious, transparent and independent review of the forest management guidelines.

A consultant group completed a comprehensive guideline review and submitted the report Review of Forest Management Guides to the Provincial Forest Technical Committee. The main recommendation, endorsed by the committee, was the amalgamation and condensation of the 34 guidelines reviewed into a more concise set of documents. This smaller number of guides would be based on a hierarchical theme, beginning at the landscape scale and progressing through stand and site scales, similar to how a forest management planning team would prepare a plan. The report suggested that this re-organization of guidelines "will facilitate the application of sustainable forest management, modifications to account for new knowledge or values… and readily support the planning process…Reorganizing the guides will reduce the number of the guides, and the complexity of applying them" (Arborvitae Environmental Services Ltd. et al. 2000, Page xi). The hierarchical approach will also enable the new set of guides to incorporate the ecologically -based 'coarse filter/fine filter' approach to wildlife habitat management, a more current approach than using featured species. Implementing the recommendations of the review will take some time, but will result in a new and improved direction in the use of implementation manuals. They will be fewer in number, organized and applied in a hierarchical fashion, ecologically -based and easier to use.

Due to the recommendations from this independent guideline review (which recommends a re-arrangement and amalgamation of MNR's implementation manuals to create a hierarchical approach), and the recent approval of the Forest Management Guide for Natural Disturbance Pattern Emulation, some of the earlier work done with respect to review and preliminary revision of existing implementation manuals has not been concluded with a final revised version. The Forest Management Guide for Natural Disturbance Pattern Emulation is considered to be a major preliminary component of the 'top' or first guide (i.e., the landscape guide) in the hierarchical approach to the implementation manuals. MNR is currently investigating further how to best proceed with revision and amalgamation of all forest management guidelines/implementation manuals, including the advantages and disadvantages that specific recommendations will have on current forest management practices. In addition, advances in analytical and operational technology (e.g., modelling tools such as the Cut Pattern Assessment Tool) have only recently become available for use by planning teams or are in the final stages of completion. It is anticipated the integration of these advanced techniques will occur when MNR moves forward with the hierarchical approach to implementation manuals.

Table 7 includes details on the present status of MNR's implementation manuals (guides).

Synopsis

MNR has undertaken a review of all of the implementation manuals within five years of the EA Approval as required by T&C 93. The need to revise an implementation manual was determined when considering advances in scientific knowledge, results of monitoring programs, advantages and disadvantages of changes to current forest management practices, advances in analytical and operation technology, recommendations from audits and suggestions from practitioners.

Priority for revision or production of new manuals was given to those directed by T&C 94 and 27(a). The review of implementation manuals influenced the priority setting of manual revision. In all instances, review and subsequent preparations or revision of the implementation manuals was done by qualified personnel from MNR, and where appropriate, with individuals from other ministries, outside agencies and stakeholders.

Working with the Provincial Forest Technical Committee in reviewing existing implementation manuals, in setting priorities for revision and amalgamation of existing manuals, preparing new manuals and in reviewing draft manuals as they are produced, has been very positive.

Peer review, public consultation and involvement with Local Citizens Committees has occurred. Work continues on the revision of several implementation manuals. While the implementation manual approach remains integral to MNR's approach to forest management, the implementation manual review process has demonstrated the need for the amalgamation and condensation of the 34 guidelines reviewed into a more concise set of documents. The independent forest management guide review project offered reasonable recommendations to improve the present guideline approach to forest management. The key recommendations from this review were supported by the Provincial Forest Technical Committee.

MNR is making recommendations regarding this term and condition in Section 3.5.2.1 Implementation Manual Review and Revision, of the Timber Class EA Review.

Table 7: Forest Management Guides (Titles and dates updated to July 17, 2002).

Provincial Guidelines		
Title	**Comments***	**Related T&C**
A Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario	Replaces A Silvicultural Guide to the Jack Pine Working Group in Ontario 1986; A Silvicultural Guide to the Spruce Working Group in Ontario 1988; A Silvicultural Guide to the Poplar Working Group in Ontario 1988	94(a)
A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario	Replaces A Silviculture Guide for the Tolerant Hardwood Working Group in Ontario 1990	94(a)
A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario	Replaces A Silvicultural Guide for the White Pine and Red Pine Working Groups in Ontario, 1989	94(a)
A Silvicultural Guide to Managing Southern Ontario Forests		93
A Silvicultural Guide for the Boreal Mixedwood Forest in Ontario (in prep.)	In preparation, anticipate completion in 2003	94(d)
A Tree-Marking Guide for the Tolerant Hardwoods Working Group in Ontario	Currently being updated and revised; technical review of second draft complete; undergoing; anticipate completion in 2002	93
Boreal Mixedwood Notes	First 24 notes released September 2000	94(d)
Management Guidelines for Forestry and Resource-Based Tourism	Replaces Timber Management Guidelines for the Protection of Tourism Values (1986)	80
Timber Management Guidelines for the Provision of Moose Habitat	Currently being updated and revised; initial draft completed	80, 107
Timber Management Guidelines for the Protection of Fish Habitat	Currently being updated and revised; draft presented to Provincial Forest Technical Committee	80, 107
Forest Management Guidelines for the Provision of White-tailed Deer Habitat		81(a), 107
Timber Management Guidelines for the Protection of Cultural Heritage Resources	Currently being updated and revised	93
Forest Management Guidelines for the Provision of Marten Habitat		94(c), 107
Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat		94(c), 107
Forest Management Guidelines for the Protection of the Physical Environment		94(b)
Forest Management Guide for Natural Disturbance Pattern Emulation		94(b), 27

Construction / Operational Manuals		
Title	**Comments***	**Related T&C**
Aerial Spraying for Forest Management	Currently being updated and revised; Replaces Aerial Spraying for Forest Management – An Operational Manual 1981	102
Access Roads Manual	Replaces Resource Access Roads Policy and Implementation Strategies and Guidelines 1985	46
Prescribed Burn Planning Manual	Replaces Prescribed Burning Planning Manual 1985	73
Environmental Guidelines for Access Roads and Water Crossings	Currently being updated and revised; draft presented to Provincial Forest Technical Committee	52(e/d)
Code of Practice for Timber Management Operations in Riparian Areas	Currently being updated and revised as part of Fish Habitat Guide; draft presented to Provincial Forest Technical Committee	76

Resource / Environmental Manuals		
Title	**Comments***	**Related T&C**
Management Guidelines and Recommendations for Osprey in Ontario	Currently being updated and revised	81(c), 107
Habitat Management for Ontario's Forest Nesting Accipiters, Buteos, and Eagles		81(b), 107
Habitat Management Guidelines for Cavity-Nesting Birds in Ontario		81(b), 107
Management Guidelines for the Protection of Heronries in Ontario	Currently being updated and revised	81(c), 107
Habitat Management Guidelines for Warblers of Ontario's Northern Coniferous Forests, Mixed Forests or Southern Hardwood Forests		81(a), 107
Habitat Management Guidelines for Bats of Ontario		81(c), 107
Habitat Management Guidelines for Birds of Ontario Wetlands Including Marshes, Swamps, and Fens or Bogs of Various Types (excluding waterfowl)		81(c), 107
Bald Eagle Habitat Management Guidelines	Currently being updated and revised	81(b), 107
Golden Eagle Habitat Management Guidelines		81(c), 107
Peregrine Falcon Habitat Management Guidelines	Currently being updated and revised draft presented to the PFTC	81(c), 107
Guidelines for Providing Furbearer Habitat in Timber Management		81(b), 107

Habitat Management Guidelines for Waterfowl in Ontario		81(c), 107
Hawk Guide for MNR Field Personnel	Revised with Forest Raptors: Their Nests in Central Ontario (Szuba and Naylor 1998)	
Forest Management Guidelines for the Conservation of Woodland Caribou: A Landscape Approach	Distributed and approved for use in Northwest Region	81(c), 107
Selected Wildlife and Habitat Features: Inventory Manual		81, 95

* Note: All implementation manuals were recently reviewed as part of the review of forest management guidelines conducted in 1999-2000. Refer to Section 3.5.2.1, and this progress report text, for more information.

Review and Revision of Silvicultural Guides; Boreal Mixedwood Guide Development - T&C 94(a)&(d)

Current Requirement

Term and condition 94(a) required MNR to review and revise all existing silvicultural guides within three years of the EA Approval, to provide descriptions of general standard site types for use in developing silvicultural ground rules.

Term and condition 94(d) required MNR to prepare a mixedwood silvicultural guide with the assistance of the Provincial Forest Technical Committee.

T&C 94(a)&(d)

(a) In accordance with the foregoing procedure, all existing silvicultural guides shall be reviewed to ensure that they reflect current scientific knowledge as it applies to Ontario, and revised to provide descriptions of general standard site types for use in developing Silvicultural Ground Rules in Timber Management Plans. Those revisions shall be completed within three years of this approval.

(d) MNR shall undertake, with the assistance of the Provincial Technical Committee, the preparation and completion of a mixed wood silvicultural guide.

Progress Report

A general standard site type can be described as an ecological landscape unit, ranging in resolution from less than 100 hectares to thousands of hectares, comprised of relatively uniform geology, parent materials, soils, topography and hydrology, and, occupied by similar combinations of trees, shrubs and herbs. Some tree species react quite differently from the same silvicultural treatment, depending on the type of site they are growing on and their location in the province. A common set of site descriptions was required to help overcome these differences. These site types are to be used in developing silvicultural ground rules in FMPs.

In 1995, a cross-section of science, information and forestry program staff from MNR decided that 'ecosites' developed for ecological land classification were to be the general standard site types for the silvicultural guides. See the progress report for T&C 97 Forest Ecosystem Classification System for more information.

An ecosite is a specific combination of soil conditions, vegetation types and climate, such that plants growing on that site are expected to respond similarly to a particular silvicultural treatment. Using ecosites as the general standard site types permits foresters to have a similar understanding of the soil and vegetation being discussed and provides some degree of confidence that a treatment used in one part of the province on a particular ecosite will have similar effects on the same ecosite in another part of the province. This not only facilitates the sharing of information, but also contributes to the monitoring of silvicultural effectiveness.

Review & Revision of Existing Silvicultural Guides

Silvicultural guides assist forest managers in the complex task of implementing ecologically sustainable silvicultural practices. They may be used by forest managers to help in formulating and evaluating silvicultural ground rules for the maintenance, or even restoration, of forest stands during the preparation of an FMP. Silvicultural guides may also be used to select the appropriate silvicultural treatment package and to complete forest operations prescriptions. While they are not intended to be a substitute for local knowledge and experience, they identify silvicultural practices, both recommendations and standards, within the ecological framework provided by the general standard site types.

At the time of the approval, the silvicultural guides were organized by tree species, namely:

- A Silvicultural Guide to the Jack Pine Working Group in Ontario (MNR 1986)
- A Silvicultural Guide to the Spruce Working Group (MNR 1988c)
- A Silvicultural Guide to the Poplar Working Group (MNR 1989b)
- A Silvicultural Guide for the Tolerant Hardwoods Working Group in Ontario (MNR 1990a)
- A Silvicultural Guide for the White Pine and Red Pine Working Group in Ontario (MNR 1990b)

MNR organized the revised silvicultural guides along the new general standard site types, or ecosites, rather than by tree species. In addition, following an ecosystem approach, the new silvicultural guides were organized to reflect the forest regions within the Area of the Undertaking.

By mid-1995, work had begun on revising these five silvicultural guides. The three existing silvicultural guides for jack pine, spruce and poplar working groups were amalgamated into a single guide which addresses management of the species in the Boreal Forest Region, entitled Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario. The existing tolerant hardwood silvicultural guide was revised as a separate document, entitled A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario. The existing red and white pine silvicultural guide was expanded to include all conifer species growing in the Great Lakes-St. Lawrence Forest Region and is entitled A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario.

Work on the new tolerant hardwood and Great Lakes-St. Lawrence conifer silvicultural guides occurred simultaneously. Team members for the revision of these two guides included forest science researchers and training specialists, ecosite specialists, wildlife experts, field foresters and policy advisors. They represented various fields of expertise from MNR, the Canadian Forest Service, the forest industry and universities. Numerous other individuals reviewed these two guides as they were produced, including MNR, the forest products industry, the Canadian Forestry Service, academia and an environmental non-governmental organization.

Similarly, in early 1996, individuals from MNR, the forest industry and the Canadian Forest Service contributed to the writing and review of the silvicultural guide for the boreal forest. The use of experts in the development and review of the guides ensured the revised guides reflected the most recent science and successful forest management techniques, and were practical guides for use by forest management planners and field staff.

As part of the development of the three new silvicultural guides, workshops and meetings were held with MNR and forest industry staff to test the presentation of information, as well as the technical silvicultural prescriptions and recommendations included in the guides. All of the guides were structured around the use of ecosites (also known as site types in MNR's Northeast Region) as the general standard site types.

Version 1.0 of the three guides was posted on the Environmental Registry for public review and comment in May 1997. There were no comments received as a result of the posting. Members of three Local Citizen Committees also reviewed this version of the guides. Their comments were considered and included, where possible, in the final guides. The Notice of Decision was posted on the Environmental Registry in June 1997. Version 1.1 of the three silvicultural guides was published in late 1997 and early 1998.

Work was underway early in the 1990s regarding the development of a tree-marking guide, intended as a sister document to the 1990 tolerant hardwood guide. This document was completed in 1993, entitled A Tree-Marking Guide for the Tolerant Hardwoods Working Group in Ontario. This guide is currently being reviewed and revised so that it reflects the changes made in the 1998 tolerant hardwood silvicultural guide. During this revision, it will be expanded to include direction for all tree species that are managed under silvicultural systems that require individual tree marking, and not just tolerant hardwoods. In this way, it will become a sister document to both the 1998 tolerant hardwood silvicultural guide and the Great Lakes-St. Lawrence conifer silvicultural guide.

Preparation of the Boreal Mixedwood Silvicultural Guide

The boreal mixedwood sites contain a number of tree species that require simultaneous management. This multi-species approach is significantly different than the more typical management of harvesting and regenerating single species stands, such as jack pine.

The first step in the approach for the development of the boreal mixedwood silvicultural guide was the development of Boreal Mixedwood Notes. These notes provide information to help field staff develop silvicultural prescriptions for the management of boreal mixedwood stands. They serve as an ecological primer for the philosophy and concepts of boreal mixedwood management and provide the scientific background and context for the information to be included in the boreal mixedwood silvicultural guide. The Boreal Mixedwood Notes reflect the considerable research being conducted in this relatively new field.

A Boreal Mixedwood Focus Group, comprised of many of the same MNR staff that developed the boreal silvicultural guide, was established to oversee the more detailed work of developing individual notes. Each Boreal Mixedwood Note was prepared by an individual or group that is knowledgeable in the particular subject matter. Draft notes were reviewed by Focus Group members, as well as by other technical experts and peers from within and outside MNR. The first 23 Boreal Mixedwood Notes were published in a binder format in September 2000. Work continues on approximately 25 additional notes. Distribution of this second set is anticipated for December 2002.

The second document, the boreal mixedwood silvicultural guide, will contain the ecological and management interpretations for mixedwood management, following the same format developed for the existing, recently revamped silvicultural guides. The management interpretations to be included in this guide would provide the specific direction to field staff on the various silvicultural treatments to be used during the preparation and implementation of FMPs. Work on the boreal mixedwood silvicultural guide continues. The writing team is working to produce a draft by a mid-2002 deadline, with completion of the final document by May 2003.

The Provincial Forest Technical Committee is actively involved in providing advice to MNR in the preparation of this guide.

Synopsis

MNR has reviewed and revised the existing silvicultural guides to provide descriptions of general standard site types (ecosites and site types) for use in developing silvicultural ground rules in FMPs. These revisions were completed within three years of the EA Approval.

The five silvicultural guides that existed at the time of the EA Approval were amalgamated into three silvicultural guides: Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario; A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario; and A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario. These guides reflect the different forest regions of the province and current scientific knowledge as it applies to the Area of the Undertaking.

Given the complexity of the boreal mixedwood ecosystems, MNR has produced 23 Boreal Mixedwood Notes, and is working on approximately 25 additional notes, that include the scientific background and context for this forest type. These notes will be the basis for the boreal mixedwood silvicultural guide, which will contain the ecological and management guidance for mixedwood management. The Provincial Forest Technical Committee is advising MNR in the preparation of the guide, which will be completed by May 2003.

MNR is making recommendations regarding this term and condition in Section 3.5.2.1 Implementation Manuals Review and Revision, of the Timber Class EA Review.

Marten and Pileated Woodpecker Habitat Guidelines - T&C 94(c)

Current Requirement

Term and condition 94(c) required MNR to prepare and implement new guideline implementation manuals for the provision of marten and pileated woodpecker within two years of the EA Approval.

> ***T&C 94(c)***
>
> *(c) MNR shall produce Timber Management Guidelines for the Provision of Pine Marten Habitat and Timber Management Guidelines for the Provision of Pileated Woodpecker Habitat. These guidelines shall be prepared and implemented within two years of this approval.*

Progress Report

At the time of the EA hearings, MNR was following a 'provincially featured' species approach to provide the habitat required by Ontario's forest wildlife species. The habitat needs of a provincially featured species, in the context of a featured species approach to wildlife habitat management, must be considered during the preparation of FMPs through the use of appropriate guidelines. Whereas the two main provincially featured species MNR recognized at the time of the EA hearings, namely moose and deer, favoured early successional forest stages, marten and pileated woodpecker require old growth forest attributes. The addition of marten and pileated woodpecker, species representative of the boreal and Great Lakes-St. Lawrence Forest Regions, respectively, would accommodate the habitat needs of other species requiring old growth forest attributes.

The EA Board directed MNR to make the pileated woodpecker an additional, provincially featured species in the Great Lakes-St. Lawrence Forest Region while the marten would be the additional, provincially featured species in the Boreal Forest Region. In management units where both forest regions occur, the forest management planning team can choose which species is more appropriate to be featured.

The pileated woodpecker habitat guidelines and the marten habitat guidelines were both prepared through processes that brought together technical experts from within MNR as well as other agencies and institutions.

Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat

A review and synthesis of the relevant scientific literature was the primary source of information used to write the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat. Development of this guideline preceded the formation of the Provincial Forest Technical Committee and public posting requirements of the *Environmental Bill of Rights*. Appropriate MNR staff were involved in the development of the guidelines which were approved in May 1996. Pre-publication copies of the guidelines were provided to some MNR field staff and members of the forest industry who were currently engaged in forest management planning. The published copy of the guideline was released in the autumn of 1996.

To aid in the implementation of the pileated woodpecker habitat guidelines into FMPs, training sessions were conducted in the autumn of 1996. Field implementation of these guidelines in forest operations began immediately following training.

Incorporation of the guidelines in the preparation of FMPs began in the autumn of 1996. Since then, forest management planning teams have been trained in the use and interpretation of the habitat supply requirements of the pileated woodpecker at the landscape-level of analysis. Habitat supply modelling tools and related technical guides, such as the Strategic Forest Management Model and the Ontario Wildlife Habitat Analysis Models, have been incorporated into the forest management planning team training requirements since the late 1990s.

In addition to extensive training, the pileated woodpecker habitat guidelines are implemented by ensuring the specific types of trees the pileated woodpecker requires are retained in areas where forest operations are planned. This is called the stand-level component of the guidelines. This requirement has been met mainly by training tree markers to retain cavity trees. Since 1996, tree markers attending the Provincial Tree Marker Certification Course, a requirement for tree markers in areas where partial harvest silvicultural systems are practiced, have been trained in the pileated woodpecker habitat guidelines. This requirement applies mainly to the Great Lakes-St. Lawrence Forest Region, where the pileated woodpecker habitat guidelines are applied. A guide entitled A Tree-marking Guide for the Tolerant Hardwoods Working Group in Ontario, has been provided to tree markers since 1993 to help identify trees with cavities in tolerant hardwoods. In 1997, a color pocket guide, Retaining Cavity Trees in Clearcuts, was produced to provide assistance in how to retain cavity trees in areas where clear-cuts are being planned.

Forest Management Guidelines for the Provision of Marten Habitat

Two literature summaries and a review and synthesis of the relevant scientific literature were the primary sources of information used to write the Forest Management Guidelines for the Provision of Marten Habitat. Development of this guideline preceded the formation of the Provincial Forest Technical Committee and public posting requirements of the *Environmental Bill of Rights*. Appropriate MNR staff were involved in the development of the guidelines and a document was approved in May 1996. Pre-publication copies of the guidelines were provided to some MNR field staff and members of the forest industry who were currently engaged in forest management planning. The published copy of the guideline was released in the autumn of 1996. Training has been provided to forest management planning teams since 1995 on various aspects of maintaining old growth and biodiversity, including marten populations and habitat. Since then, forest management planning teams have been trained to use new habitat supply models, such as the Ontario Marten Analyst, specifically designed to help implement the marten habitat guidelines.

At the stand level, in management units with a substantial amount of Great Lakes-St. Lawrence forest, the marten habitat guidelines have been implemented by retaining cavity nesting trees through tree markers trained during the Provincial Tree Marker Certification Course. In the boreal forest, forest management planning teams have been provided with direction on how to retain dead and declining trees and coarse woody debris, important components of marten habitat. This direction has subsequently been incorporated into forest operation prescriptions.

Synopsis

Term and condition 94(c) required the guidelines to be completed by May 1996 and be implemented. The Divisional Court in *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* concluded that 'implemented' meant that the requirements of the guidelines had to be implemented on the ground by May 1996 with respect to the three FMPs at issue in the legal proceedings. In responding to the court ruling, MNR undertook a renewal of the FMPs at issue following an expedited timeframe to include all of the direction in the marten and pileated woodpecker habitat guidelines. All FMPs initiated since the fall of 1996 have been prepared using these guidelines. The guidelines have been implemented at both planning (i.e., landscape) and operational (i.e., stand) levels in all FMPs as required.

MNR is making recommendations regarding this term and condition in Section 3.5.2.1 Implementation Manuals Review and Revision, of the Timber Class EA Review.

Collection of Inventory Information and Development of Information Systems - T&C 95

Current Requirement

Through T&C 95, the EA Board required MNR to accelerate its program of inventory and information collection and enhance the development of its information management systems for easy retrieval and public availability.

T&C 95

MNR shall accelerate its program of inventory information collection concerning the timber resources and other values on Crown lands in the Area of the Undertaking for use in timber management planning. MNR shall enhance development of its information management systems to ensure that data is systematically collected, updated and stored; is easily retrievable by those involved in timber management planning; and is available to the public.

Progress Report

MNR has made considerable progress in accelerating its program of inventory information collection for timber and other forest values, and in enhancing the development of its information management systems.

With respect to the collection of timber resources information, MNR and the forest industry have worked to update and maintain the forest resource inventory so the data are available to forest managers in the early stages of management plan preparation. In 2002, the forest resource inventory within the Area of the Undertaking will be fully digital, facilitating the integration of values information with basic forestry data. Since 1993, the forest resource inventory of 61 management units have been completed. Since that time the number of management units has been reduced through amalgamations.

Prior to the EA Approval, funding for the purpose of collecting inventory information was not allocated directly to forest management in a systematic fashion based on planning needs and requirements. Since then, MNR has targeted the acceleration of inventory information collection concerning timber resources and other values.

MNR has also collected additional forest resource values information through other closely related terms and conditions of the EA Approval (e.g., T&C 97, the Forest Ecosystem Classification Program; T&C 98 Northern Ontario Wetlands Evaluation System; T&C 99 Areas of Natural and Scientific Interest surveys; and T&C 100 Growth and Yield Program). Term and condition 97, forest ecosystem classification, requires MNR to develop systems to classify forest stands by ecosite or site type. Ecosite or site-type data, can now be shown on some management unit planning maps along with forest resource inventory data.

Term and condition 95 also required the collection of inventory information concerning other values, such as wildlife habitat information.

The identification and mapping of wildlife habitat values has long been an integral part of forest management planning. Since 1996/97, strategic planning and specific funding to locate and map wildlife habitat values has accelerated the collection of this information. Funds for wildlife habitat inventory programs are generally allocated to an MNR District at the appropriate time in the plan production schedule, generally once preliminary areas for forest operations have been selected. Examples of wildlife habitat attributes identified as values are moose aquatic feeding areas; woodland caribou calving, nursery and wintering areas; and, nesting sites for birds such as the red-shouldered hawk, osprey and bald eagle. Guidance to direct wildlife habitat inventory effort is given in the Selected Wildlife and Habitat Features: Inventory Manual.

Fish and wildlife inventories have been important, on-going MNR programs. MNR has or has had about 42 initiatives providing information for wildlife monitoring, inventory and assessment in the province. Similarly, there are or have been about 80 initiatives related to fisheries and aquatic inventory, assessment and monitoring. Information these initiatives gather that is related to forest management planning and considered to be a value, is recorded on values maps.

The types of values information commonly collected and represented on a values map for use during the preparation of an FMP include:

- Natural resource features such as fish and wildlife habitat
- Forest resource uses such as tourism establishments
- Infrastructure features such as roads and utility corridors
- Cultural heritage sites such as traditional use sites
- Special land uses of local significance such as registered trapline areas
- Exclusions from the land base, such as National Parks

Values maps with this information are available to the public. MNR continues to build on these data as new information is collected.

Cultural heritage values information includes registered cultural heritage sites and areas of high potential. Sites with cultural heritage values are registered and maintained by the Ministry of Tourism and Recreation and made available to MNR, and licensed archeologists in Ontario. Due to the sensitivity of this information, it is not available to the general public. MNR has also developed predictive methods and models to identify high potential cultural heritage sites, and accelerated their application.

For standardized storage and retrieval of values information at the management unit level, MNR developed the Natural Resources Values Information System. Development began in 1995. Based on a geographic information systems framework, the Natural Resources Values Information System established data mapping standards for values, and provides for their systematic update, maintenance, storage and retrieval. Timber values, fish and wildlife habitat values, and other natural resource and infrastructure features (e.g., roads and utilities), have all been incorporated into the Natural Resources Values Information System.

Using the Natural Resources Values Information System, information can be displayed in both map and tabular format. Maps showing customized sets of values can be readily created and updated. The Natural Resources and Values Information System has been implemented across all MNR district offices, and each district office is responsible for maintenance and upkeep of its district database. This system currently supports over 700 data types. MNR continues to build on these data as new information becomes available.

The Natural Resources Values Information System data can now be merged into a provincial data set within the Ontario Land Information Warehouse, which in turn is linked to the Land Information Ontario program. This ensures that this information is available to other ministries and stakeholders. Through the Natural Resources Values Information System, MNR can also produce values maps, as required by T&C 17 and Appendix 5 of the EA Approval, which are available to the general public during the preparation of FMPs.

These improvements have also contributed to meeting the background inventory and mapping requirements of T&Cs 15, 16 and 17.

A number of analytical models have also been developed or secured by MNR to assist in information management/analyses and the development of FMPs. Examples include:

- Strategic Forest Management Model, which allows forest management planning teams to predict wood supply and wildlife habitat supply into the future;
- Landscape Ecological Analysis Package II (Perera et al. 1997), used in landscape pattern and diversity analysis;
- Ontario Marten Analyst, used to assess spatial distribution of core marten habitat;
- Ontario Wildlife Habitat Analysis Model, used in spatial habitat analysis for certain wildlife species;
- Ontario Disturbance Agglomeration Model (Carr 1999), used to analyze disturbance sizes and spatial distribution; and
- Socio-Economic Impact Model, used to analyze social and economic impacts of forest management activities (see the progress report for T&C 104 Social and Economic Analysis).

Two record management and report generation systems have also been developed by MNR: the Forest Management Planning Automated Reports Module and the Forest Operations Compliance Inspection System (Woldanski et al. 1998). The Forest Management Planning Automated Reports Module information system is used to create FMP tables, Annual Work Schedule maps, Management Unit Annual Report tables, and Reports of Past Forest Operations tables. The Forest Operations Compliance Information System, also known as FOCIS, is used for the preparation of forest compliance inspection reports.

The Forest Information Manual prescribes the requirements for collecting and exchanging information needed for forest management planning purposes on Crown lands between MNR and Sustainable Forest Licence holders. In specific cases, Sustainable Forest Licence holders are required to conduct inventories (such as forest resource inventories), conduct surveys (such as silvicultural effectiveness monitoring surveys), collect basic information about new values encountered during the implementation of forest operations, and provide information to support current forest management planning requirements (such as management unit annual report information and maps required for displaying forest operations). Similarly, MNR is required to provide Sustainable Forest Licence holders with administrative and geographic base data (such as water/ drainage, transportation, etc.), known values information, and a digital inventory of forest resources for non-Crown lands and Crown land exclusions for their licence areas.

Synopsis

MNR has made considerable progress in accelerating its program of inventory information collection for timber and other forest values, and in enhancing the development of its information management systems.

MNR has met the requirements of T&C 95 by collecting a variety of forest resource and other values information, and by developing a number of information management systems used in forest management planning. In addition these efforts have also contributed to and benefited from the activities associated with T&Cs 97, 98, 99 and 100. Values maps, prepared in accordance with T&C 17, are the principle means by which natural resource values information is made available to the public.

MNR is making recommendations regarding this term and condition in Section 3.5.3.1 Inventory Information and Management Systems, of the Timber Class EA Review.

Silvicultural Effectiveness Monitoring - T&C 96

Current Requirement

The EA Approval contains a term and condition related to silvicultural effectiveness monitoring. Term and condition 96 requires MNR to improve its methods of assessing regeneration success, and its practices in keeping records and reporting on regeneration results.

T&C 96

MNR shall improve its assessment, recording and reporting of silvicultural effectiveness related to both natural and artificial renewal methods, through the development of programs to address the following subject areas:

(a) the maintenance of silvicultural records of prescriptions and their results;
(b) the enhancement of record keeping methodologies in order to provide for improved tracking of the linkages among silvicultural guides, Silvicultural Ground Rules, project records, Free-to-Grow Assessments and other condition survey records, and Forest Resource Inventory updating;
(c) the enhancement of methodologies and tools for analysis of silvicultural trend data to assess the effectiveness of prescriptions; and
(d) the systematic reporting of results of renewal activities to the general public.

Progress Report

Context

At the time of the EA Approval, MNR was responsible for conducting and reporting on free-to-grow surveys. The free-to-grow survey information was supplemented with plantation survival, fifth-year stocking and seeding assessments, known as condition surveys, conducted by MNR or the forest industry. Silvicultural activities that were implemented were recorded in the Silvicultural Information System and the assessment of the success of these activities was recorded in the Silvicultural Assessment System. Only a few Forest Management Agreement areas were using these two information systems, and therefore it was not possible provincially to link planned regeneration activities with actual activities and their results.

The EA Approval stated that "MNR needs to identify what information is required to develop the systematic ability to track the information over time, and to use consistent measures of success and consistent definitions of silvicultural effectiveness to determine whether objectives are being achieved"(Koven and Martel 1994, Page 312).

During the Timber Class EA hearings, MNR expressed its intent to develop a new Silvicultural Treatment Effectiveness Monitoring System to address silvicultural effectiveness. The purpose of the Silvicultural Treatment Effectiveness Monitoring System was to provide easier access to site-specific information collected over time, and to improve MNR's ability to assess and report on regeneration success and silvicultural effectiveness.

In the early 1990s MNR refocused its provincial strategic direction to that of sustainable forest management, as described in MNR's Statement of Environmental Values, the Policy Framework For Sustainable Forests, and the *Crown Forest Sustainability Act*. Under the *Crown Forest*

Sustainability Act, trusts were established to ensure silvicultural funding would be sufficient to provide for forest renewal, through Crown charges paid by the forest industry. See the progress report for T&C 114(a)(x) Regeneration Expenditures, for more information

MNR subsequently reassessed its new Silvicultural Treatment Effectiveness Monitoring System approach, given changes brought about by the *Crown Forest Sustainability Act* and the new business relationship with the forest industry described in Section 1.3. This reassessment resulted in a decision to address T&C 96 in a different manner than was anticipated during the Timber Class EA hearings.

Silvicultural effectiveness may be viewed from various perspectives: at the stand level for particular prescriptions or treatments; at the forest level or management unit level to evaluate trends on particular forest units[1]; and at the regional and provincial levels to measure program success. Analysis at each level provides answers to the basic questions of 'what did we intend to accomplish?', 'what did we actually accomplish?' and 'how well did we do it?'.

The Silvicultural Effectiveness Monitoring Manual for Ontario, released in 2001, presents MNR's current approaches to silvicultural effectiveness monitoring. The manual describes the components that meet T&C 96 requirements for the development of programs to improve the assessment, recording, and reporting of silvicultural effectiveness. MNR meets these requirements by addressing in the manual all aspects of silvicultural effectiveness monitoring, including objective setting, standards, assessment methodology, compilation and reporting, and analysis and evaluation. The Silvicultural Effectiveness Monitoring Manual for Ontario also describes those aspects of the forest management planning process that relate to silvicultural effectiveness monitoring and explains their linkages.

The Silvicultural Effectiveness Monitoring Manual for Ontario provides the definition of silvicultural effectiveness, as follows: "silvicultural effectiveness is the comparison of how the results of a prescription or treatment compare with: (a) the targeted results; (b) the results and costs of other prescriptions on similar sites; and (c) silvicultural standards or target measures" (MNR 2001e, Page 3). The following progress report summarizes the information under the same section headings that appear in the manual, to provide an understanding of Ontario's silvicultural effectiveness monitoring program.

Silvicultural Objective Setting

Effectiveness monitoring is used to determine if management activities are producing the expected results. At the management unit level, the ultimate goal is to fulfil the activities outlined in the FMP and to meet the desired future forest condition. At the eco-regional and provincial levels, the goal is to preserve the continuity of healthy, sustainable forest ecosystems. Silvicultural effectiveness monitoring contributes to the successful attainment of these goals.

Silvicultural objectives are set, measured and assessed at the stand level, with overall effectiveness analyzed at the forest, or management unit, level. The silvicultural ground rules, the management unit annual work schedule, and the management unit annual reports contain four components that provide for this:

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[1] A forest unit is an aggregation of forest stands for management purposes which have similar species composition, develop in a similar manner (both naturally and in response to silvicultural treatments), and are managed under the same silvicultural system.

- The desired outcome of silvicultural activities (i.e., the desired future forest condition).
- The planning method of reaching that outcome (i.e., the silvicultural treatment package).
- The standard that will be used to assess success (i.e., regeneration or management standards).
- The actual treatments that are conducted (i.e., the annual work schedule and management unit annual report).

The key element for initiating a successful silvicultural effectiveness monitoring system is the ability to store and retrieve these four components to provide geo-referenced information. This element is known as the forest operations prescription. The *Crown Forest Sustainability Act* and the FMP Manual require forest operations prescriptions be prepared for all harvest and renewal activities. They are the main mechanism for linking planned to actual silvicultural activities. A forest operations prescription is a site-specific, integrated set of harvest, renewal and maintenance activities that are developed to ensure that the Crown forest will be renewed and maintained. The forest operations prescription for a particular stand is the accumulation of the original silvicultural ground rule for the stand, the portions of the annual work schedules that relate to the stand, including any changes that are appended to the annual work schedule during implementation, and the signature of a Registered Professional Forester verifying the appropriateness of the treatments. Along with the management unit annual reports, these documents describe the desired outcome for the stand, the activities that were originally planned, the standards to be met and what was actually implemented on the ground. Although these documents may be stored in different locations and formats, they must be retrievable as a geo-referenced record to facilitate tracking.

The Forest Information Manual includes the information requirements for forest operations prescriptions, identifies who is responsible for collecting, storing, retrieving and transferring silvicultural effectiveness data, and provides the requirements for data transfer. Sustainable Forest Licensees are required to maintain silvicultural records, including forest operations prescriptions and results in a retrievable and geo-referenced format. The use of geographic information systems has been key to enhancing record-keeping methods and tracking results. In this way, the prescriptions are linked to the results, and their effectiveness can be properly assessed.

The Forest Information Manual and the FMP Manual further outline standards for maintaining or recording forest operations prescription information, and roles, responsibilities and timelines for providing this information to the MNR for the purposes of monitoring and auditing forest operations conducted in a specific site.

Silvicultural Standards and Assessment Methodology

The minimum silvicultural objectives for a particular stand and the minimum regeneration and management standards, are determined as part of the silvicultural ground rules at the time of FMP preparation. They include target tree species and acceptable tree species, minimum height, timeframe to reach free-to-grow in even-aged systems, stocking and/or density, and survey methodologies.

The appropriate data must be collected and analyzed to assess whether a particular area has met the regeneration and management standards. This also provides for the ability to track stand development over time toward the desired future forest condition. These data are used to predict long-term results and assess the impacts if actual and expected results are not the same, allowing the forest manager to determine follow-up treatments where the standards of the silvicultural ground rules have not been met, or to track decisions to re-classify the resultant stand to another forest unit.

If the regeneration and management standards described in the silvicultural ground rules have been met, the stand may be re-entered into the forest resource inventory using the assessment data. The Forest Information Manual details all information requirements for stands re-entering the forest resource inventory.

Before the EA Approval, MNR required three categories of surveys to assess regeneration; stocking assessment (fifth year and free-to-grow), plantation survival assessment, and seeding assessment. Changes in planning and management responsibilities have resulted in all but the free-to-grow surveys being optional, although most forest companies include these surveys as a regular part of business. Sustainable Forest Licensees are required to conduct a monitoring program including the assessment of regeneration, and to provide the required information to MNR, as detailed in the FMP Manual and the Silvicultural Effectiveness Monitoring Manual for Ontario. MNR's responsibilities include conducting spot checks of the areas as required.

MNR has enhanced methodologies and tools for monitoring silvicultural effectiveness by enhancing the methodologies for conducting regeneration assessments. The Silvicultural Effectiveness Monitoring Manual for Ontario describes two regeneration assessment procedures that incorporate modern information technology to ensure efficient and effective data collection and analysis – namely, Silvicultural Treatment Assessment and Reporting System and Free Growing Regeneration Assessment. The Silvicultural Treatment Assessment and Reporting System is a computer-based data collection and analysis system appropriate for use in all silvicultural systems. Free Growing Regeneration Assessment is a regeneration assessment system, used primarily in the boreal forest and applicable to all species and stands managed the clearcut silvicultural system. These methodologies are to be used by MNR to substantiate their spot checks and by independent forest auditors to conduct their field assessments of regeneration.

The Free-Growing Regeneration Assessment Manual for Ontario (MNR 1995e) and the Silvicultural Treatment Assessment and Reporting System Program Manual (Pinto 1998) describe the methodologies to be used as the standards for audit purposes.

Compilation and Reporting

Reporting of survey assessment results is required through forest management planning as part of the management unit annual report. The management unit annual reports summarize significant trends and results and include recommendations from regeneration results. In addition, these reports include a discussion on the progress in achieving targets identified in the FMP. In particular, trends where stands are consistently not tracking to the predicted regeneration standard and future forest condition, must be discussed. The Silvicultural Effectiveness Monitoring Manual for Ontario includes a figure that details the silvicultural effectiveness monitoring components within the forest management planning system, at both the stand and management unit level. This table illustrates the way in which management unit annual report information is summarized to determine regeneration results (MNR 2001e, pages 14-17).

Longer-term trends, generally at the forest level, are summarized and compared to predictions made in the FMP at the end of each plan term in the five-year management unit report of past forest operations. They are developed through compiling the management unit annual reports and updating the forest resource inventory. The report includes a summary statement of silvicultural effectiveness by forest unit, working group, and silvicultural treatment package. If targets were not achieved, the assessment must provide reasons for the failure to achieve the targets and a discussion of the possible implications. Conclusions related to the success of silvicultural treatments, the accuracy of predictions of future forest units, and the year of successful regeneration, must also be discussed.

Both the management unit annual reports and reports of past forest operations are available to the public as part of the normal forest management planning process.

Management unit annual reports are complied and results are published in the Provincial Annual Reports on Forest Management. The Provincial Annual Report on Forest Management includes a summary of silvicultural effectiveness in the form of areas assessed for free-to-grow status and areas declared free-to-grow.

The State of the Forest Report, 2001, contains a provincial overview and summary of silvicultural effectiveness drawn from data contained in the preceding Provincial Annual Reports on Forest Management, as well as the management unit reports of past forest operations.

MNR also reports silvicultural statistics to the federal government for inclusion in The Compendium of Canadian Forestry Statistics and The State of Canada's Forests report.

Analysis and Evaluation

Analysis and evaluation at the stand level allows for the declaration of stands as free-to-grow and their re-introduction into the forest resource inventory. The use of geographic information systems in forest management planning has been integral in information management, contributing to the enhancement of record keeping and subsequent effectiveness assessments. The enhanced capabilities of the forest industry in maintaining silvicultural records using geographic information systems has allowed for geo-referenced records to ensure that specific site records are maintained and can be linked to planned and actual activities that occur on the site. With the aid of geographic information systems, assessments can be made at both the forest and stand level using measures such as treatment type, forest unit, silvicultural treatment package, future forest unit, etc. Ensuring that appropriate records are maintained allows a forest manager to examine the effectiveness of specific prescriptions or treatments and determine the appropriateness of the applied silvicultural ground rule from the FMP. The resultant forest unit trends, as reported in the management unit annual reports, are used during the preparation of subsequent FMPs.

At the management unit or forest level, comparing the regenerating forest to the desired or expected outcomes, as forecasted in the FMP, is very important. Data from individual stands are used to examine expected and actual changes in forest units. Forest level evaluation is based on the updated stand level descriptions included in the forest resource inventory.

MNR has developed forest-level tools for assessing future implications of management actions on the forest, by linking silvicultural effectiveness results to forest management planning, and through the use of the Strategic Forest Management Model. Inputting actual silvicultural results into the Strategic Forest Management Model allows forest managers to determined the effect of current silvicultural practice on future forest condition. Conversely, the silvicultural results necessary to produce the desired future forest condition can be determined by the same means. The differences between the expected and actual values may indicate a change to wood supply or habitat supply is occurring.

The five-year management unit report of past forest operations include comparisons of expected changes and actual changes for each forest unit and summarize the five-year harvest and regeneration information, permitting an evaluation of silvicultural effectiveness. Although long-term trends may not be apparent in these reports, anomalies may be evident in the examination of the particular forest units, silvicultural treatment packages, and the amount of area that meets the regeneration and management standards.

Several of the FMP Manual indicators of sustainability are directly linked to silvicultural effectiveness monitoring, such as percent of forest area classified as not sufficiently regenerated. These data are collected at the stand level, are summarized at the forest unit level and are reported at the management unit level. The results are examined further as part of the provincial evaluations of forest sustainability.

Synopsis

The assessment, recording and reporting of silvicultural effectiveness for all types of regeneration, both artificial and natural, has been improved primarily through MNR's regulatory and legislative framework.

A fundamental change since the EA Approval has been the development of a new business relationship with the forest industry and the transfer of the delivery of most operational aspects of forest management, such as forest inventory, planning, operations and some aspects of monitoring and reporting, to the forest industry. This development has affected how MNR has re-designed programs in response to the EA Approval requirements.

MNR decided not to create a separate geographic information system for silvicultural monitoring to be used by MNR and the forest industry, but rather to address silvicultural effectiveness through the *Crown Forest Sustainability Act*'s regulated manuals. The *Crown Forest Sustainability Act* includes requirements for forest operations prescriptions and dedicated funding for silviculture through two trusts. The FMP Manual includes requirements to address silvicultural effectiveness monitoring and reporting at the management unit level. Requirements to provide and manage information are described in the Forest Information Manual. The Silvicultural Effectiveness Monitoring Manual for Ontario, the Silvicultural Treatment Assessment and Reporting System, and Free Growing Regeneration Assessment have been developed to support the fieldwork of resource managers and auditors.

Advances in information technology combined with MNR's forest management planning process, maintain the linkages required to assess silvicultural effectiveness at the management unit level, compare actual activities with forecasts, and identify successes and failures. The results of silvicultural practices are reported annually and every five years at the management unit level and provincial level.

MNR is making recommendations regarding this term and condition in Section 3.2.2.2 Silvicultural Effectiveness, of the Timber Class EA Review.

Forest Ecosystem Classification System - T&C 97

Current Requirement

The EA Board required MNR to continue to develop a Forest Ecosystem Classification Program to provide support to forest management planning.

T&C 97

MNR shall continue the development of the Forest Ecosystem Classification Program through the following initiatives:

(a) the completion of "interpretation manuals" to assist in application of the Forest Ecosystem Classification program;
(b) the examination of improved inventory and mapping technologies:
(c) the expansion of the program throughout the Area of the Undertaking; and
(d) the enhancement of technology transfer and training programs.

Progress Report

In addition to the requirements of T&C 97, the development of a Forest Ecosystem Classification Program in Ontario was a commitment made by the province as part of the National Forest Strategy and is consistent with MNR's ecosystem approach to natural resource management. Forest ecosystem classifications were also required for the establishment of numerous forest management criteria and indicators for sustainability, and provide a valuable ecological framework for information used in natural resource management.

Forest ecosystem classification was integrated into a much broader MNR provincial program known as the Ecological Land Classification Program. Ecological land classification is a hierarchical approach to classifying all land-based environments, including non-forested lands, wetlands such as bogs and swamps, and successional forest conditions. This approach will provide for the integration of many aspects of natural resource management under one ecological framework (e.g., helping to ensure parks and protected areas represent all of the representative Ontario environs; providing a better tool for wildlife population inventories).

The Ecological Land Classification Program required analytical tools, research investigations and the development of other products, in addition to the 'interpretation manuals' identified in T&C 97(a). For example, an array of forest ecosystem classification guides, plant guides and wildlife/ecosystem use interpretive manuals were produced for northwestern Ontario, a large portion of central Ontario and the clay belt portion of northeastern Ontario. In addition, a first approximation of an ecosystem classification for southern Ontario has been completed.

Products and publications resulting from MNR projects, collaborations and third party investigations now number in excess of 80 and cover an area greater than, and including, the Area of the Undertaking. With the completion of products such as the Field Guide to Forest Ecosystems of Northeastern Ontario (Taylor et al. 2000) and the Field Guide to the Forest Ecosystem Classification for Northwestern Ontario (Sims et al. 1997), the requirements of T&C 97(a) and (c) have been fulfilled.

Significant improvements were made in inventory and mapping technologies as required by T&C 97(b). The inventory data from field studies used to develop this multi-scale ecological land classification are electronically available in provincial data archives. Data based on area coverage, environmental themes and selected landsat imagery sources are available for regional and provincial applications in the Ecological Land Classification – Geographic Information Centre. Algorithms were developed to translate existing forest resource inventory data to an ecological land classification, generally an ecosite. Some management unit planning maps can now be produced using both forest resource inventory data and the corresponding ecosite. Mapping products can often be shared between MNR district offices and the local forest industry and the intention is to improve data sharing capabilities.

MNR has enhanced technology transfer and training programs for ecological land classification, including forest ecosystem classification, as required by T&C 97 (d). Extensive technology transfer and training in ecological land classification has been offered on an ongoing basis to MNR field staff, forest industry staff and consultants. Annually, approximately 6-10 workshops have trained between 100-200 people. People are trained to verify and classify forest stands/wetlands to the corresponding ecological land classification ecosite and to understand the ecological hierarchical system and how it can be used for inventory and monitoring purposes. Extension and advice is also a service provided by MNR's Ecological Land Classification Program experts. To support transfer, comprehensive training materials using standard audio-visual techniques have been employed and recently, a CD based photo-set of subject matter covered in training sessions has become available.

Synopsis

The Ecological Land Classification Program, which evolved from the Forest Ecosystem Classification Program, has provided important information and products for use in natural resource management. Under the auspices of the Forest Ecosystem Classification Program, numerous standards were developed for inventory collection, monitoring, reporting and planning. MNR continues to provide extensive technology transfer and training to natural resource managers in ecological land classification.

MNR is making recommendations regarding this term and condition in Section 3.5.3.2 Forest Ecological Classification Program, of the Timber Class EA Review.

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Northern Ontario Wetland Evaluation System - T&C 98

Current Requirement

During the EA hearings, the EA Board recognized the need for a system to evaluate and provide ecological information on northern Ontario wetlands and required MNR to develop a Northern Ontario Wetland Evaluation System, for use in timber management planning.

T&C 98

Within three years of this approval, the Ministry of Natural Resources shall develop a Northern Ontario Wetlands Evaluation System, to provide information on wetlands for use in timber management planning.

Progress Report

MNR already had a wetland evaluation system in place for Southern Ontario and had begun work on a Northern Ontario wetland evaluation system prior to the EA Approval. This was needed for forest management purposes, as well as for land-use planning needs in general. The wetlands evaluation system was developed by Northern Wetlands Working Group and, subsequently, the Provincial Wetlands Working Group, with input from many sources. These groups were established by MNR for the purpose of adapting the 1993 wetlands evaluation system that was used in southern Ontario, to northern wetlands. The revision of the original 1993 evaluation system and manual was done under the auspices of these committees by the Northern Wetlands Evaluation Revisions Committee, which later merged with the provincial Wetlands Evaluation Revisions Committee. All wetland evaluation falls under the umbrella of the Ontario Wetland Evaluation Systems.

The revised northern manual, entitled Ontario Wetland Evaluation System: Northern Manual, which included an evaluation system, was released in May 1994. Thus the revised manual was delivered three years in advance of the T&C 98 requirement.

The Ontario Wetland Evaluation Systems recognize four types of wetlands - marshes, swamps, fens and bogs - and provides a numerical means of ranking the importance of different wetlands based upon an evaluation of their ecological features, values and functions. These functions are grouped into four categories: biological, social, hydrological and special features. When ranked, a wetland is considered to be a Provincially Significant Wetland if the total score is 600 points or more, or if the score for either the biological or special features component is 200 points or more.

The Ontario Wetland Evaluation Systems have linkages to the *Planning Act* (1990) and its Provincial Policy Statement (Ministry of Municipal Affairs and Housing 1997), wherein wetland policy is a component of Natural Heritage Policies. Provincially significant wetlands are protected in different ways, dependent on their geographic location. In the southern part of the province, where private land and municipal organizations prevail, wetland protection is provided through the municipal *Planning Act* and the development and site alteration of a provincially significant wetland is not permitted. However, in northern Ontario, development and site alteration of provincially significant wetlands may be permitted if it can be demonstrated there will be no negative impacts on the natural features or the ecological functions of the wetland.

MNR has field staff trained in wetland evaluation and there are consultants who can also provide this service. Wetland evaluation and scoring has been improved with advancements in knowledge. MNR examined and reported in 1995 on the possibility of using models to predict wetland score. Subsequently, in 1996, another technical note reported these models could be used as tools by a resource manager to identify the significance of a wetland for a fraction of the cost of a full evaluation.

In northern Ontario, MNR field staff assess whether planned forest operations have potential to impact a wetland and a decision is made whether to evaluate and rank the wetland. If the wetland is evaluated as a provincially significant wetland, it is identified as a value within the forest management planning process and operations are planned in accordance with Area of Concern planning requirements.

Synopsis

With the publication of the northern wetland manual within the timeframe required by T&C 98, and the subsequent release of technical notes to further facilitate wetland evaluation, MNR has fulfilled the requirements of the term and condition. Tools are now available to forest management planning teams to identify wetlands as to their ecological features, value and function. This information is important to ensure the appropriate depth of analysis is done to ensure information on wetlands is available for use in forest management planning.

Areas of Natural and Scientific Interest - T&C 99

Current Requirement

MNR was required to complete, within five years of the decision (i.e., by May, 1999), surveys across all site regions that identify candidate life science Areas of Natural and Scientific Interest. These refer to living organisms (e.g., old growth, white pine forests). Similarly, MNR was required to complete surveys across the entire Area of the Undertaking to identify significant earth science Areas of Natural and Scientific Interest. These refer to geological formations (e.g., eskers, drumlins). The information was to be used in timber management planning.

T&C 99

Within five years of this approval, the Ministry of Natural Resources shall complete surveys which identify candidate life science Areas of Natural and Scientific Interest (ANSIs) in all Site Regions and significant earth science ANSIs within the Area of the Undertaking for use in timber management planning.

Progress Report

At the time of the EA decision the land classification methodology used by MNR was based on the Hills classification system, which used site district and site region delineation. Since that time, MNR has adopted the Ecological Land Classification that uses ecodistrict and ecoregion delineation. Implementation results reported in Provincial Annual Reports on Forest Management have followed the Hills classification system in reports up to and including 1997/98. Subsequent reports have used the Ecological Land Classification System.

The wording of T&C 99 warranted some interpretation with respect to life science values. The identification of representative life science Areas of Natural and Scientific Interest is primarily done on an ecodistrict (site district) basis, not on an ecoregion (site region) basis. Therefore MNR has responded to this term and condition by completing surveys on a finer geographic scale than was required for life science values.

Areas for earth science representation are identified on the basis of geological themes (e.g., glacial deposits) rather than on the basis of a land classification system.

MNR has completed surveys which identified candidate life science and significant earth science Areas of Natural and Scientific Interest in the Area of the Undertaking during the first five years of the EA Approval. Most of these surveys were conducted in support of land use planning exercises, particularly those associated with planning for parks and protected areas. Regardless of the means of identification, these features have been recognized as values in forest management planning.

In 1996/97, all 49 ecodistricts, and all of the surficial geological themes occurring within the Area of the Undertaking, were subjected to gap analyses, to identify the best sites that would represent the ecological and geological values not captured in the existing parks and protected areas system. Gap analysis is a systematic technique used to determine geographic priorities in conserving biological, ecological or geological diversity. Once the areas with the best representation were identified, they were put forward to the Lands for Life Round Tables for their consideration as possible new protected areas. After further public consultation, proposals were finalized in the approved Ontario's Living Legacy Land Use Strategy, which recommended the establishment of 378 new or expanded parks and protected areas containing 2.4 million hectares.

MNR directed forest management planning teams to take all necessary precautions to ensure all recommended parks and protected areas are not compromised as a result of any planned forest management operations.

The Ontario Forest Accord, which was developed by members of the forest industry, the Partnership for Public Lands and MNR, supported the establishment of a mutually acceptable process to increase the representative protected areas system within the Area of the Undertaking.

Gap analysis identified areas requiring further representation, particularly in the life sciences. These areas will be addressed through the Ontario Forest Accord (Article 3 and elsewhere) and the process referred to in the report, entitled Room to Grow (Ontario Forest Accord Advisory Board 2002). Room to Grow supports an increase in parks and protected areas beyond the current 12 percent of the Area of the Undertaking, subject to permanent increases in wood supplies.

MNR has reported on the progress and success of implementing T&C 99 in each Provincial Annual Report on Forest Management from 1995/96 through to 1999/00. Areas of Natural and Scientific Interest were also discussed in the State of the Forest Report, 2001. A summary of the progress on T&C 99 as reported in the Annual Reports on Forest Management is provided by year and is presented by the life science and earth science categories.

Life Science

1995/1996 Provincial Annual Report on Forest Management – Reports identifying representative life science natural heritage areas were completed for MNR site districts 4E-3, 4S-4, 4S-5 and 5E-6. A study of site district 4E-2 was underway, but was not complete. Site visits to various natural heritage areas were conducted, including locations in site districts 4E-2, 4E-4, 5E-7, 5E-8, 5E-9 and 5E-10. Detailed inventory reports on several life science natural heritage sites in site districts 3S-1 and 5E-11 were completed.

1996/1997 Provincial Annual Report on Forest Management – Analyses of unrepresented landform/vegetation features were completed for site regions 0E, 1E, 2W, 3E, 3S, 4E, 4S, 4W, 5E, 5S. Biophysiographic analyses were completed for site regions 3S and 5S and gap analyses were initiated for site districts 3S-1, 5S-1 and 5S-2. A geographic information system-based method for conducting gap analysis on large electronic data bases was developed and was initiated in site districts 3E-3, 3E-5 and 4E-2. In partnership with Parks Canada, gap analysis projects were also initiated in site districts 3W-3 and 3W-5. Updates and revisions were begun in site district 5E-1 and completed in the nature reserve zoning in Arrowhead Provincial Park (site district 5E-8).

1997/1998 Provincial Annual Report on Forest Management - The geographic information system-based method for conducting gap analysis on large electronic databases was enhanced and analyses was done on site districts 2E-3, 2W-3, 3E-1, 3E-2, 3E-3, 3E-4, 3E-6, 3S-1, 3W-4, 4E-1, 43E-2, 4E-5, 4W-2, 5E-4, 5E-7, 5E-8, 5E-12. Updates and revisions to the site district 5E-

1 life science representation report, and the site district 3E-5 analysis, were completed. The partnership between Parks Canada and MNR to consider life science representation needs in site districts 43W-3 and 3W-5 continued. Old growth pine and other representation needs in site districts 4E-4, 5E-6, 5E-9, 5E-10, 5E-11 were assessed. Reassessments of unrepresented landform/ vegetation features were completed for the western portion of Manitoulin Island (site district 5E-2).

1998/1999 Provincial Annual Report on Forest Management - Efforts focused primarily on supporting the Lands for Life planning process. Gap analysis for all ecodistricts within the Lands for Life planning area from the previous year was finalized. Additional analyses searched for alternative sites that could represent required ecosystems in many ecodistricts. All results were provided to the Lands for Life Round Tables for their deliberations on protected areas. In addition to ecodistrict representation work, park class target achievement was assessed. Proposals for protected areas to fill relevant class targets (wilderness, natural environment, waterway classes) in each ecoregion or ecodistrict were submitted to the Round Tables.

Discussions on various approaches to gap analysis were held with numerous internal and external clients and stakeholders. A review of the ‘floating reserves’ concept was completed, and the role of areas of concern in protecting biodiversity was discussed. A paper on the life science gap analysis methodology was presented at the annual meeting of the U.S. Gap Analysis Program. Conservation land securements were made through partnerships with the Nature Conservancy of Canada, utilizing various mechanisms (purchases, donations, conservation easements). These securements were concentrated in southern Ontario, mainly south of the Area of the Undertaking.

1999/2000 Provincial Annual Report on Forest Management - As part of the implementation process for areas protected by Ontario's Living Legacy, analyses of landform/vegetation features were conducted. These analyses were site-based and scattered among numerous ecodistricts and all three administrative regions. Presentations on MNR's approach to gap analysis and the outcomes of the Ontario's Living Legacy planning process were made at various conferences and workshops, some of which were international in scope.

Conservation land securements continued to be achieved through a partnership with the Nature Conservancy of Canada. These securements were concentrated in southern Ontario (mostly within ecoregions 6E and 7E). In support of this partnership, priority lists for securement were developed. MNR also participated as a major partner in the development of natural heritage conservation actions in the Carolinian Zone of Ontario (ecoregion 7E). MNR also began participation with numerous partners from Michigan, Wisconsin, Minnesota, Manitoba, and Ontario in an ecoregional planning project for the Superior Mixed Forest Ecoregion (ecoregions 4W and 5S).

Earth Science

1995/1996 Provincial Annual Report on Forest Management – A review of earth science targets and level of achievement of those targets was begun for central Ontario.

1996/1997 Provincial Annual Report on Forest Management – Work planning and priority setting were completed. The development of gap analysis methodology based on provincial geological themes was begun. An earth science systems plan for selected geological themes in central Ontario was completed.

1997/1998 Provincial Annual Report on Forest Management - MNR Northeast Region was identified as having significant gaps in earth science with respect to glacial geology representation. Two earth science gap analysis studies were completed for the area north of Lake Huron and the Hearst-Timmins area, to address these gaps in representation. A reconnaissance earth science gap analysis project was undertaken in site region 3S, in combination with a life science gap analysis project. Previously identified candidate protected areas, as well as new sites, were identified. In all studies, gap analysis to identify candidate sites consisted of extensive literature and air photo investigations, and field testing through reconnaissance inventories resulted in identification of candidate protected areas. A review of gap analysis needs in the rest of the Area of the Undertaking was completed and several new candidate protected areas were identified and field tested in MNR's Northwest Region. Additional earth science conservation work was undertaken in MNR's Southcentral Region (in particular the Prettys Hill Area of Natural and Scientific Interest).

1998/1999 Provincial Annual Report on Forest Management - Work focused on identifying candidate sites for the Lands for Life Round Tables, and on refining boundaries and/or searching for alternate sites. Further field investigations of candidate earth science sites were also undertaken. New candidate sites identified through the ecological gap analysis process were investigated for potential overlapping earth science values. This involved extensive aerial reconnaissance and field investigations in MNR's Northwest Region, Northeast Region, and within the Great Lakes Heritage Coast area. In addition, selected candidate earth science and ecological sites in MNR's Southcentral Region were investigated for their geological values, and for the landform component of their landform-vegetation description taken from the gap analysis process. An ongoing project continued to identify significant earth science features on Manitoulin Island in conjunction with the ecologists from the Ontario Parks Northeast Zone office.

1999/2000 Provincial Annual Report on Forest Management – Most of the earth science work revolved around the Ontario's Living Legacy planning initiative. New protected areas proposed by Ontario's Living Legacy were reviewed with the intent of determining mineral potential and issues, as well as refining boundary decisions. Ongoing work with regard to the Ontario Forest Accord included a study of selected priority earth science sites for addition to the Partnership for Public Lands sites. One project was an exhaustive airphoto review supported by reconnaissance-level field work northeast of Lake Nipigon. Ongoing field work included several projects not associated with Ontario's Living Legacy, including a review of the geological values of selected properties on Manitoulin Island, new protected area acquisitions on the Bruce Peninsula and a review of selected earth science Areas of Natural and Scientific Interest in MNR's Midhurst District.

Synopsis

MNR has completed surveys within the five-year time frame required by T&C 99. Further, in 1999, both Ontario's Living Legacy Land Use Strategy and the Ontario Forest Accord were completed. These initiatives provide, through the establishment of parks and protected areas, protection for a complete representation of those features characterized as earth science Areas of Natural and Scientific Interest. Similarly, most features characterized as life science Areas of Natural and Scientific Interest have also been identified and protected. Some gaps with respect to protection of representative life science Areas of Natural and Scientific Interest have been identified, and steps are being taken to address this through the Ontario Forest Accord.

MNR is making recommendations regarding this term and condition in Section 3.5.3.4, Areas of Natural and Scientific Interest, of the Timber Class EA Review.

Growth and Yield - T&C 100

Current Requirement

The EA Board concluded during the course of the EA hearings that more comprehensive information on growth and yield of forests was required. Foresters, biologists, geneticists and many others needed better information on growth and yield to estimate and measure the growth of trees and forests.

> ***T&C 100***
>
> *MNR shall design and implement a provincially coordinated program to obtain further information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.*

Progress Report

The provincially coordinated Growth and Yield Program was designed to gather information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events. This program would result in the capability to assess the combined effects of harvest, renewal and maintenance, against the natural changes that occur in the forest environment.

At the time of the EA hearing, the growth and yield information MNR was using were provincial normal yield tables developed by Walter Plonski and provincial cull tables. This information was obtained mostly from permanent sample plots, which had been established as early as the 1930s to measure growth and yield. Province-wide studies and analysis of these permanent sample plots was done in the 1950s.

MNR designed and established a comprehensive, long-term, provincially coordinated Growth and Yield Program under the auspices of the Ontario Terrestrial Assessment Program. A network of 1,100 permanent sample plots has been established in a stratified sampling design, mostly across the Area of the Undertaking, although some of the plots are outside the Area of the Undertaking. By establishing permanent sample plots within ecologically similar forest stands in various, key successional stages, and by taking repeated measurements on various ecosystem elements, predictions on forest growth and yield can be made. This technique is known as chronosequencing and is expected to produce results on forest growth and yield in less than half the time it would take if forests were simply monitored as they grew. This plot network was established using standard methods outlined in the Ontario Forest Growth and Yield Program Field Manual for Establishing and Measuring Permanent Sample Plots (Hayden et al. 1995).

Data acquired from permanent sample plots is used to asses the influence of site quality, stand structure and silvicultural treatment on stand yield and development, which is then compared with areas impacted only by natural disturbance. Some of the other important objectives of the program are as follows:

- to evaluate results of past management decisions on forest productivity and recommend changes to forest practices and assumptions used,
- to link attributes of stand structure and development to other resource values such as wildlife habitat,
- to provide tools and other information to support strategic wood supply analysis, and,
- to help define and determine components of forest sustainability.

MNR has also entered into a partnership arrangement with the forest industry to establish a network of permanent growth plots. Between 1992 and 1996, 3,300 growth plots were established. Permanent growth plots allow for the collection of some of the same information as permanent sample plots, but are less expensive, easier to establish and are also designed to address specific needs of forest managers. In addition, five significant, historical growth and yield plot networks are in the process of being included in the Growth and Yield Program. These historical plot networks will enhance the ability of the program to assess the impacts of forest management practices on forest growth and yield.

Recently the focus of the program has been to maintain, remeasure, and relocate plots in Ontario's permanent sample plot network; to establish single permanent sample plots; and to initiate and/or complete a range of forest modelling projects. In 1999/00, over 91 new permanent growth plots were established and a related field manual is in development.

Information from the Growth and Yield Program is being used to support reporting and modelling exercises, such as the development of a provincial growth and yield database and model for Ontario called FVS^{Ontario} (in testing). Other products include silvicultural decision support tools, such as guides and data diagrams, and input into efforts to understand Ontario's carbon budget in relation to climate change.

The Growth and Yield Program is also being used to assist in other programs such as data needs for exceptions monitoring[2], in particular harvesting on shallow sites in northwestern Ontario and commercial thinning in northeastern Ontario. The exceptions monitoring program on shallow soil sites in northwestern Ontario is closely linked with T&C 101, which pertains to long-term effects on forest productivity caused by full-tree harvest and full-tree chipping activities.

In the sample plots of the Growth and Yield Program, ecological data such as the composition and structure of understory vegetation, including annual plants, herbs, mosses, shrubs and regeneration, are also recorded. Re-measurement of these stand attributes provides important information to forest managers about forest growth and development through time.

The Growth and Yield Program has provided information on snags and downed woody debris. Snags and downed woody debris are important components of wildlife habitat for many species and contribute to forest productivity.

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[2] Exceptions monitoring is the requirement that forest practices, which are not recommended by the appropriate implementation manual, be monitored and assessed as to the potential impacts that may result.

Synopsis

The establishment of the Growth and Yield Program as a provincially coordinated, long-term program to obtain further information on forest growth and yield, has fulfilled the requirements of T&C 100.

A stratified sampling design of sample plots been established across the entire Area of the Undertaking. The influence of site quality, stand structure and silvicultural treatment that results from forest management practices will be compared to how a forest responds to natural disturbances. Over time, the program will provide improvements to knowledge about growth and yield of Ontario's forests. The Growth and Yield Program has a number of important linkages to other MNR programs and is linked to related studies and programs with other agencies and institutions throughout North America.

The Growth and Yield Program has also provided additional information on a variety of topics, such as information on snags and downed woody debris.

MNR is making recommendations regarding this term and condition in Section 3.5.4.1 Growth and Yield Program, of the Timber Class EA Review.

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Study of Effects of Full-Tree Harvest and Full-tree Chipping - T&C 101

Current Requirement

Concerns over the long-term effects of full-tree harvesting and full-tree chipping on forest productivity were heard by the EA Board. MNR was required by the EA Board to design and implement a study to address these concerns.

> ***T&C 101***
>
> *MNR shall design and implement a study pertaining to the effects of full-tree harvest and full-tree chipping on long-term forest productivity.*

Progress Report

Full-tree harvesting is the practice of removing the aboveground portion of the tree from the site, treetop and all. De-limbing and topping is usually done at roadside, and the resulting slash is burned or sometimes left to decompose. Full-tree chipping is the practice of removing the aboveground portion of the tree from the site and chipping it at roadside, top and all. In this case, bark and other small pieces of wood are separated from the chips by screening, and left to decompose at roadside. In both cases, there is considerably less on-site woody debris left in the harvested stand in comparison to more conventional harvest methods such as cut and skid.

There are two productivity concerns with respect to these practices. One is their potential effect on nutrient cycling, especially on those nutrient-poor soils where much of the nutrients are in the trees. The other concern is with the amount of area covered by slash or other debris as a result of de-limbing, topping or chipping, which may restrict trees from re-establishing.

Five broad objectives were established to guide the research initiative under T&C 101. Briefly, the objectives were:

1. To characterize and quantify harvest treatment impacts.
2. To compare recovery in harvested areas with natural disturbances.
3. To track site recovery and the associated changes occurring at the process level to identify natural fluctuations.
4. To develop predictive models to evaluate the effectiveness of silvicultural alternatives in maintaining site productivity.
5. To do the work over a wide range of site conditions.

Based upon these objectives, a provincial-level Sustainable Productivity Working Group comprised of researchers from MNR and the Canadian Forest Service designed a full-tree harvest and full-tree chipping study for black spruce and jack pine forest types. These forest types were chosen for study because jack pine and black spruce are the two most abundant and important commercial species in Ontario's boreal forest. The study is examining harvest-related nutrient removals, especially on shallow and coarse-textured soils. This research requires approximately 20 years to complete.

Results of the research, listed in the Bibliography and Presentations, have been communicated to an array of audiences including researchers, policy makers and operational personnel. To date, the research has resulted in a number of refereed journal papers, a book chapter, technical reports, theses and workshop/conference presentations.

The full-tree harvesting and long-term site productivity study was established in 1993. As of 1995/96, all research plots were established, baseline pre-harvest data were collected, and associated chemical analyses of water and soil samples were conducted. In 1996/97 additional data were collected and models developed to quantify water and litter-fall fluxes. In 1997/98, detailed field measurements and laboratory analyses were carried out on three of nine experimentally treated sites. These data helped to quantify early changes in soil nutrient pools, provide an estimate of elemental leaching rates, track logging slash decomposition rates, and measure early seedling growth. All nine sites were similarly assessed in 1998/99. In 1999/00, efforts focused of the establishment of wildfire chronosequence for average soil conditions. Ten additional sites were added to the study. As with the experimental harvest sites, data from these chronosequence sites were collected to calculate nutrient and carbon pools, as well as to provide estimates of key ecosystem processes. These patterns and processes could be used as natural benchmarks when comparing and evaluating harvest-related effects.

Interim conclusions on the impacts of full-tree harvest and full-tree chipping practices on nutrient levels in spruce and jack pine forest ecosystems are expected to be available after the collection and analysis of data from the 2001 and 2002 field seasons.

The project is meeting its objectives, and results have already been used to improve forest management practices.

The study provided input into the Forest Management Guidelines for the Protection of the Physical Environment, which is a requirement of T&C 94 (b). These guidelines were prepared to help resource managers prevent, minimize or mitigate the potentially negative impacts that forest operations can cause, such as erosion, rutting and soil compaction.

The project has strong linkages to the academic community and the forest industry. It is also affiliated with other programs, notably the Long-Term Site Productivity Network, an interjurisdictional program established to assist with immediate ecosystem management issues, but which will also be valuable in longer-term analysis and interpretation of the full-tree harvest and chipping study.

This study is being used to assist in the data needs for an 'exceptions monitoring' program (i.e., harvesting on very shallow sites in northwestern Ontario). This program is also closely linked with T&C 100. For further information, see progress report for T&C 100, which pertains to forest growth and yield.

Synopsis

MNR has designed and implemented a long-term (approximately 20 year) study pertaining to the effects of full-tree harvest and full-tree chipping on long-term forest productivity. Jack pine and black spruce forest ecosystem types were chosen for intensive study because they were the most relevant forest ecosystem types impacted by full-tree harvest and full-tree chipping. The design and implementation of this study fulfills the requirements of T&C 101.

MNR is making recommendations regarding this term and condition in Section 3.5.4.2 Full-tree Harvesting, Full-tree Chipping Studies, of this Timber Class EA Review.

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Tending and Protection Programs - T&C 102

Current Requirement

Term and condition 102 requires MNR to ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests.

The work on policies and procedures, as well as investigative research into the safe use of registered and approved products, is referred to by MNR as the tending and protection improvement programs. Staff in what is now the Forest Health and Protection Section, as well as staff in what is now the Forest Research and Development Section, have led the tending and protection improvement programs.

> ***T&C 102***
>
> *MNR shall ensure that tending and protection programs are conducted in accordance with current scientific knowledge applicable to Ontario's forests by maintaining policies and procedures that ensure proper and safe use of registered and approved products; investigating new technologies; testing alternative control methods; and supporting research initiatives.*

Progress Report

The EA Board found MNR's pesticide programs to be well planned, personnel to be trained and licensed, security to be good, and operations well-executed with a high degree of operational control(Koven and Martel 1994, Page 260). The EA Board also approved MNR's integrated pest management approach (Koven and Martel 1994, Page 11). The EA Board was convinced that herbicide tending is essential to the regeneration of future conifer timber supply (Koven and Martel 1994, Page 9).

Policies and Procedures

MNR maintains policies and procedures in order to ensure that pesticides are used properly, safely and in accordance with scientific knowledge. Knowledge is gained following extensive testing by MNR and its partners. These partners include other provinces, the Government of Canada (primarily the Canadian Forest Service), the forest products industry, academic institutions and other agencies.

MNR tending and protection programs have been planned and executed by following guidance provided in a set of directives, which describe MNR policy for a particular activity; and procedures, which describe roles and responsibilities, and the steps required in conducting the activity. Procedural guidance for pesticide programs is also provided in the FMP Manual. The Aerial Spraying for Forest Management manual provides direction on planning and conducting operational aerial spray programs.

As a result of the research and studies within the tending and protection improvement programs, the following directives and procedures governing the use of pesticides are being revised:

- Aerial application of herbicides for forest management in Ontario – procedure (MNR 1990d)
- Aerial application of herbicides for forest management in Ontario – directive (MNR 1990e)
- Aerial application of insecticides for forest management in Ontario – procedure (MNR 1990f)
- Aerial application of insecticides for forest management in Ontario – directive (MNR 1990g)
- Experimental use of pesticides in forest management – procedure (MNR 1990h)
- Experimental use of pesticides in forest management – directive (MNR 1990i)

The FMP Manual and the Aerial Spraying for Forest Management manual are also currently being revised.

Investigations, Testing and Research

Investigations, tests, and research in insect management have been conducted by MNR, or by MNR partners. MNR is a member of the Spray Efficacy Research Group, an association of forest management, regulatory and research agencies, and pesticide suppliers interested in forest pest management. Much of the advances in insect management have been achieved through Spray Efficacy Research Group.

With its partners, MNR has participated in approximately 10-15 projects per year. Some examples of these projects are:

- Testing of the Advanced Integrated Multidimensional Modeling Software guidance systems. These guidance systems use weather parameters from the forest canopy to adjust the location of aerial spray lines so as to minimize off-target drift and optimize the even deposit of the spray over the target stand. These have been developed in partnership with the provinces of New Brunswick and Manitoba and are being tested operationally in Ontario experimental programs.
- Development of Global Positioning Systems and Geographic Information Systems for navigating spray aircraft, and tracking flight and spray lines. These systems are being developed in partnership with Forest Protection Limited, New Brunswick. This technology, which is now operational, guides aircraft to the spray block, identifies spray lines within the block, and provides a record of the aircraft operations.
- Testing of the botanical insecticide neem, to control insects such as sawflies which are not susceptible to other commonly used, non-chemical pesticides such as *Bacillus thuringiensis* (B.t.). The work is being done in partnership with the Canadian Forest Service, the County of Simcoe, and the provinces of New Brunswick and Newfoundland. As a result of this work, a neem-based product has received temporary registration in Canada and is now available as an alternative product.
- Testing of new B.t. products for controlling spruce budworm (in partnership with the Canadian Forest Service and with funding from pesticide manufacturers). Several new B.t. formulations have subsequently been registered for use in Canada.
- Trials are on-going to refine the pheromone for jack pine budworm for use as a detection method and possible control measure (in cooperation with Simon Fraser University).
- Support to the University of Toronto to examine the role of natural enemies in the population dynamics of the European pine shoot beetle, a recently introduced insect.

- Testing of a naturally-occurring virus specific to controlling gypsy moth, conducted by the Canadian Forest Service in partnership with MNR. This product has now been registered for use in Canada.

In addition to the above studies, several other research projects that support T&C 102 were undertaken by the Canadian Forest Service. These studies focused primarily on pesticide application rates and methodologies, such as the development and wind-tunnel testing of a drift-free pesticide atomizer. A pest management database for field foresters was also developed.

Vegetation Management Alternatives Program

MNR established the Vegetation Management Alternatives Program to explore alternatives to the use of herbicides in tending and protection programs. This program established five inter-related objectives to undertake research, investigate and test methods to control competing vegetation. Briefly, the five objectives, or research areas, established by the Vegetation Management Alternatives Program are as follows:

1. Assessment of treatment alternatives. The treatments assessed to control competing vegetation included manual cutting, animal grazing, mulching, controlled burning, new mechanical equipment, new herbicide application systems, new forest management methods and use of cover crops.
2. Studies of the response of forest ecosystems to alternative treatments. For example, when an alternative treatment was applied, researchers investigated how young trees grow, and how habitat for moose and small mammals is affected.
3. Development of predictive forest models for alternative treatments. For example, research into models to predict timber yield as a result of using alternative treatments (including no treatment) was undertaken.
4. Studies into ecosystem dynamics to understand the effects of alternative treatments. For example, investigations into impacts on soil nutrients and soil organisms as a result of controlled burns were undertaken.
5. Studies on the use of fungi, viruses, insects, bacteria and naturally occurring plant chemicals to control competing vegetation. Studies to this effect were initiated.

This program contributed at least partial funding for 120 field trials, 24 literature reviews and three surveys of foresters and the public. At a minimum, third-year post-treatment data have been collected from 61 of the field trails and of those, 27 will shortly have a fifth year post-treatment data set. Five trials are contributing to knowledge and understanding of the effects of alternative treatments on plant ecology, diversity and succession and wildlife dynamics. Testing, monitoring, and measuring within the areas where the field trials have been established will continue, evolving with new understandings, to provide greater knowledge of vegetation and wildlife interactions and responses to various treatments. Already, the oldest of the field trials, known as the Fallingsnow Ecosystem Project, has resulted in a special issue of the Forestry Chronicle and a summary article in the Journal of Forestry.

To date, the Vegetation Management Alternatives Program has produced over 172 reports, including refereed journal publications, conference papers and technical reports. Some of the work contributed to the revision of MNR's silvicultural guides. Website pages within the MNR Internet site have been prepared which outline the program and the ongoing findings from the research and investigations. Between 1994 and 2000, MNR staff within the program also delivered more than 300 presentations to MNR and forest industry personnel on vegetation management treatments and their impacts.

The Vegetation Management Alternatives Program has led to significant advancements in the science and use of motor-manual and mechanical cutting. These advancements have been implemented by the forest industry in several contracts within Ontario. The controlled burn trials have resulted in prescribed fire for red oak management becoming the preferred treatment option in eastern Ontario. The use of mulches and tree shelters as woodland restoration and rehabilitation tools have been accepted as woodland restoration and rehabilitative tools.

Some investigations resulted in data showing that some alternatives were neither effective nor cost-effective, such as prescribed burning for regeneration/tending of white pine stands. Some reports are still forthcoming, so the practicality of some investigations, for example, pre-harvest girdling, is unknown at this point. One fungal pathogen that was investigated (*Chondrostereum*) shows promise of having the potential to control unwanted hardwood competition. This has been registered for a limited term as a control product for use in Canada. A proposal has been submitted to the Pest Management Regulatory Agency for it to receive full registration.

Some of the results of the investigations indicate that:

- Clearcutting, followed by mechanical site preparation, planting of a single tree species and aerial application of herbicides does not create single species, single layered monocultures.
- Most ecosystem components showed little or no difference in their response to herbicide and non-herbicide alternatives.
- Some of the alternatives to the use of herbicides are not only ineffective, but they present problems for the environment. For example, sheep used for vegetation control were found to pose a threat to water quality.

Efforts were made to develop six models to predict forest composition and structure and of those, two are complete. These are models that predict hardwood stand regeneration and a model of light competition for young jack pine and black spruce.

Synopsis

MNR has fulfilled the requirements of T&C 102 with advancements in scientific knowledge concerning tending and protection improvement, and the maintenance of policies and procedures which ensure proper and safe use of registered and approved products. A regulatory framework which maintains policies and procedures on the safe and proper use of registered and approved pesticides ensures new knowledge is incorporated into these policies and procedures in a timely fashion. New knowledge from on-going studies is already being used in managing Ontario's forests and further advancements and practical applications are anticipated.

MNR is making recommendations regarding this term and condition in Section 3.5.4.3 Tending and Protection Improvement Programs, of this Timber Class EA Review.

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Old Growth - T&C 103

Current Requirement

Term and condition 103 required MNR to investigate the subject of 'old growth' ecosystems and develop a policy to provide an environmentally sound conservation strategy, and definitions of old growth specific to Ontario forest conditions. Term and condition 103 also required MNR to provide a conservation strategy, and to develop management directions and definitions for old growth white and red pine by May 1995. MNR was required to develop management direction for use until a general policy setting out an environmentally sound conservation strategy was available. Old growth white pine and red pine stands within site region 4E were to be excluded from harvesting until the old growth white and red pine conservation strategy was produced. Further, FMPs were to record all sites found to contain communities of old growth white and red pine as values, or record why a particular site did not constitute old growth white or red pine.

T&C 103

(a) During the term of this approval, MNR shall investigate the subject of "old growth" ecosystems and develop a policy to provide an environmentally sound conservation strategy, and definitions of old growth specific to Ontario forest conditions.

(b) As an interim measure, within two years of this approval, MNR shall develop management direction concerning old-growth values for use in timber management planning.

(c) MNR shall provide an environmentally sound conservation strategy and management direction concerning red and white pine old-growth values for use in timber management planning across the Area of the Undertaking by May 1995.

(d) Old growth red and white pine stands within site region 4E shall continue to be excluded from harvesting until such a policy is provided and implemented.

(e) For the purpose of this approval, and until a provincially coordinated general policy setting out an environmentally sound conservation strategy is provided which,

  (i) Defines old growth white and red pine or deems what is old growth white and red pine, and

  (ii) Provides a specific process to identify and plan for the management and conservation of old growth white and red pine,

Timber Management Plans must record as values pursuant to Appendix 5, part B, section 1(a)(iv) all sites found to contain communities of old growth white and red pine. Where candidate sites are omitted from the values list and values maps, the Plan must record the reasons the site does not constitute old growth red and white pine.

Progress Report

T&C 103(a) & (c)

MNR had already begun to investigate old growth forest ecosystems prior to the EA Board's decision in 1994. In 1990, MNR established an Old Growth Conservation Project under the Sustainable Forestry Initiative. As part of its investigation on old growth forest ecosystems, MNR appointed a public advisory committee to represent the full range of public opinion on the issue. The Old Growth Forest Policy Advisory Committee was made up of representatives from the forest and mining industries, organized labour, Aboriginal people, environmental and conservation groups, and the faith and education communities. They were directed to:

- Review existing information relative to old growth forest ecosystems and their conservation.;
- Gather input and recommendations from groups and individuals that have expressed an interest in the conservation of old growth forest ecosystems and build consensus among these groups.
- Develop options for the conservation of old growth forest ecosystems to be presented to the Minister of Natural Resources.
- Make recommendations to the Minister of Natural Resources for acquiring new information to better understand the biological, economic, social and cultural values of old growth forest ecosystems in the longer term.

MNR also established an Old Growth Scientific Advisory Committee, who met periodically with the Old Growth Forest Policy Advisory Committee and assisted them in their investigations. The purpose of the Old Growth Scientific Advisory Committee was to bring scientific expertise to assist in their deliberations.

The Old Growth Forest Policy Advisory Committee initiated public involvement and consultation regarding the subject of old growth in January 1992. They focused their attention on the conservation of red and white pine forest ecosystems during their consultations in 1992. The consultation efforts included 6 workshops attended by over 500 people, a questionnaire completed by 250 people and a call for letters and submissions of which almost 50 were received. This resulted in the development of a report entitled Interim Report on Conserving Old Growth Red and White Pine. The committee's 1993 interim report presented a definition of old growth forest ecosystems and made recommendations for conserving old growth white and red pine forest ecosystems.

The Old Growth Forest Policy Advisory Committee then expanded its attention and public consultation to include all old growth forest ecosystems. This included: six public meetings attended by over 750 people; workshops and question/answer sessions; over 200 completed and returned comment sheets; an additional 72 letters and written submissions received from across the province. These efforts resulted in their final report in 1994 entitled Conserving Ontario's Old Growth Forest Ecosystems: Final Report of the Old Growth Policy Advisory Committee. The people who participated in the Committee's public consultation included community and environmental groups, foresters, academics, scientists, the forest industry, Aboriginal people, government, field biologists, ecologists, cottagers, naturalists, and other concerned citizens.

The Old Growth Forest Policy Advisory Committee's 1994 final report provided valuable advice for the development of a comprehensive old growth forest conservation strategy. The recommendations cover the following broad areas: landscape management; protected areas; forest management; integrated evaluation framework; research; education and information; and implementation and monitoring. In October 1994, MNR announced the release of the final report and invited public comment. The responses provided MNR with additional guidance for the development of an old growth forest policy proposal.

In May 1995, MNR published A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems for Ontario. The strategy was incorporated into the requirements of the FMP Manual.

As part of the EA Board's deliberations on the revision of the FMP Manual (per T&C 90(b)), the EA Board reviewed the progress MNR had made in implementing T&C 103. In their 1995 Report on the Approval of the Class Environmental Assessment for Timber Management on Crown Lands in Ontario, the EA Board "...accepted that MNR had complied with condition 103(c)" because it had provided a conservation strategy for old growth red and white pine forest ecosystems for Ontario (Koven and Martel 1995, pages 19-20).

In 1997, MNR released a draft old growth forest policy proposal entitled, A Conservation Strategy for Old Growth Forest Ecosystems on Crown Lands in Ontario. This policy proposal was posted on the Environmental Registry for public review and comment. The Provincial Forest Policy Committee was involved in the development of the old growth policy proposal prior to its release. Further work on the draft policy proposal was postponed while government efforts were directed towards enhancing parks and protected areas through the Lands for Life land use planning initiative.

An Old Growth Definitions Project Team comprised of MNR staff was established in December 1997 to develop definitions of old growth specific to Ontario forest conditions. The findings of this team have been compiled into a draft report entitled Old Growth Forest Definitions for Ontario: Draft for Public Review and Comment. This draft report was released for public review and comment in April 2002. The old growth definitions will support Ontario's continuing efforts to identify old growth forests across the province.

An Old Growth Policy Team was established in 2001 to revise and complete the development of an old growth policy, including old growth definitions. This work is being done in accordance with T&C 103(a) and is considering the recommendations contained in the 1994 final report entitled Conserving Ontario's Old Growth Forest Ecosystems. When finalized, the old growth policy will serve as an environmentally sound conservation strategy, with definitions of old growth specific to Ontario forest conditions.

In May 2001, the Provincial Forest Policy Committee was updated on progress being made in implementing T&C 103, and indicated their continued support.

T&C 103 (b)

Term and condition 103(b) required MNR to develop interim management direction concerning old growth values for use in planning, within two years of the EA Approval. Management direction is provided through a variety of legal and policy instruments. These are used by resource managers to direct and guide how Ontario's forest lands and resources are to be managed.

Prior to the EA Approval in 1994, MNR was providing interim management direction for conserving old growth values through a variety of means including:

- The MNR Central Region's 1992 guideline, Incorporating Biodiversity in Timber Management Plans, provided instructions to planners on how to incorporate biodiversity conservation into Timber Management Plans. One of the strategies was to provide for a diversity of forest structure by including provisions for maintaining or developing a full range of age classes in the unit.
- MNR released A Policy Framework for Sustainable Forests in 1994, which establishes a series of principles for sustaining forests. It includes the goal of ensuring the long-term health of forest ecosystems. It also includes the principle that forest practices, including

all methods of harvesting, must emulate, within the bounds of silvicultural requirements, natural disturbances and landscape patterns. This goal and principle provides for old growth forests.

After 1994, interim management direction with respect to 'old growth values' was provided to planning teams through a variety of policies, documents and activities:

- Broad policy direction was provided in MNR's Statement of Environmental Values (1995), while the *Crown Forest Sustainability Act* provides the legal authority for directing that the "[FMP Manual] shall provide for determinations of the sustainability of Crown forests in a manner that is consistent with the following principles: 1) Large healthy, diverse and productive Crown forests and their associated ecological processes and biological diversity should be conserved; and, 2) The long-term health and vigour of Crown forests should be provided for..." (*Crown Forest Sustainability Act* 1994, Section 3).
- The Forest Operations and Silviculture Manual addresses the management of old growth values and states:

  > "The management of old growth from a landscape perspective should be considered in planning for all forest tree species in Ontario's forests.
  >
  > The Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems for Ontario provides direction to field staff when preparing forest management plans and conducting forest operations. The knowledge gained from working with these two species will be applied when similar measures are considered for other tree species" (MNR 1995b, pages 11-12).

  - The goal for A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems, which is included in Appendix V of the FMP Manual, is to ensure that red and white pine ecosystems, including old growth stands, are present on the landscape of Ontario now and into the future, while permitting a sustainable harvest of red and white pine. This will be done through protection and through forest landscape management. More specifically, the strategy includes the following objectives:
    - As a minimum, red and white pine in management units will not be reduced to an area less than current levels.
    - The age class distribution of red and white pine forests at the management unit level will include old growth red and white pine forests.
    - Silvicultural prescriptions will be based on specific stand and site conditions and should be used to achieve the objectives outlined in FMPs.
    - Where stand and site conditions permit, silvicultural techniques that promote the natural regeneration of red and white pine will be the preferred option.
- The FMP Manual addresses old growth ecosystems in various sections:
  - Section 1.4.4, requires that all sites that contain old growth red and white pine forest communities must be identified on the values maps for the management unit (Page A-9, line 1-6).
  - Section 2.2.2.4, requires that "other uncommon or notable natural resources (e.g. significant old growth stands), be described" (Page A-33, lines 29-31).
  - Section 2.3.2.1 specifically identifies Ministry direction as a means of determining forest sustainability (Page A-41, lines 21-24).

  - Section 2.3.3.1 directs that for those forests with a forest cover component of red or white pine, planning teams will develop biodiversity objectives within the context provided by A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems (Page A-47, lines 17-20).
  - Section 2.3.5 specifies that the FMP will not threaten the availability of preferred habitat for selected wildlife species at the eco-regional level. This is one of non-spatial tests of sustainability (Figure A-2, Page A-64). Several of the selected wildlife species in each FMP depend on mature and old growth forests.
  - Section 2.6.2 requires that the supplementary documentation of every FMP will contain the reasons why some sites which contain old growth red and white pine forest communities will not be managed for old growth values. (Page A-138, lines 11-12).
- The Forest Resource Assessment for Crown Lands in Ontario plays a key role in ensuring the long term health of Ontario's forests. The policy directs that the productivity of Ontario's forests, associated ecological processes and biological diversity be conserved through the forest management planning process. The policy states that the broad composition of the forest must be maintained and where appropriate enhanced. 'Broad composition of the forest' refers to the general species composition and age class structure. The principle applies to old growth forests because they are a specific part of the forest composition and are required to ensure long term health of Ontario's forests.
- The Forest Management Guidelines for the Provision of Marten Habitat and the Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat are also part of MNR's management direction on old growth because these are provincially featured species for mature and old growth forests. Featured species are based on the concept that the provision of their habitat protects the habitat of other species that rely on similar habitat types. Therefore, in providing habitat for marten and pileated woodpecker, mature and old forest habitat types, including stand level old growth structural features, are maintained. Since 1996, these guidelines have been implemented through the preparation of FMPs by addressing forest level components and through the implementation of those FMPs, which provides for the stand level components. The forest and stand level old growth structural features are provided for in the following ways:
  - The guidelines for marten habitat direct that 10-20% of the forest, which has the capability to produce marten, must be maintained in suitable conditions. This includes forests that are approximately 80 years or older. In addition, they state that silvicultural practices that retain logs, stumps and other coarse woody debris on the ground are encouraged.
  - The guidelines for pileated woodpecker habitat provide for the maintenance of specific habitat features such as cavity trees, downed woody debris needed for feeding, nesting and roosting and the provision on habitat at the landscape-level using habitat supply modelling.
- Certified tree markers are responsible for the tree-marking in the Great Lakes-St. Lawrence forests that are harvested under selection or shelterwood systems. They are responsible for implementing the stand level components of the Woodpecker Guidelines. Study Notes: Wildlife Habitat Concerns are provided as part of the Provincial Tree Marking Certification Course, which require markers to incorporate concerns for wildlife habitat, biodiversity and aesthetics into their marking (Naylor 2002). Through tree marking, old growth structural features such as supercanopy trees, veterans and snags, which are associated with wildlife habitat requirements, are retained. A Tree-Marking Guide for the Tolerant Hardwoods Working Group in Ontario has been provided to tree

markers since 1993 and assists in tree-marking cavities. This guide is currently being revised. The draft guide describes the importance of old growth and suggests ways that stands can be managed to maintain old growth characteristics.

Since May 1996, MNR has developed additional management direction on old growth values:

- An operational field guide, Retaining Cavity Trees in Clearcuts, was produced to assist forest operators in selecting cavity trees for retention in clearcuts.
- A Silvicultural Guide for the Tolerant Hardwood Forest in Ontario and A Silvicultural Guide for the Great Lakes-St. Lawrence Conifer Forest in Ontario both recommend the retention of a diversity of age classes on the landscape, including the old forest age classes. The latter guide explicitly describes a model that can be used to estimate the amount of old growth habitat to retain. It is applied across the province for the Great Lakes-St. Lawrence conifer ecosystems and provides guidance on the application of the policy direction in A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems. Both guides prescribe the retention of structural habitat components such as cavity trees, downed woody debris, solitary conifers, supercanopy trees and veterans, which are components of mature and old growth ecosystems.

FMPs have addressed management direction concerning conservation of old growth values. In addition to addressing the FMP Manual requirements, many planning teams have developed management unit objectives for maintaining or increasing the proportion of area in mature and older age classes. Current FMPs include specific requirements for the retention of cavity trees and other old growth characteristics in areas allocated for harvest.

In 1996, compliance with T&C 103(b) was at issue during the *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)* judicial review proceedings. MNR's approach to providing management direction through a number of documents was contested by the appellants, who argued that management direction should have been consolidated into one discreet document. The Ontario Divisional Court did not make any findings of fact on this issue or on whether MNR was in compliance with T&C 103(b) due to the vagueness of the term and condition wording.

T&C 103 (d)

Term and condition 103 (d) states that, "Old growth red and white pine stands within site region 4E shall continue to be excluded from harvesting until such a policy is provided and implemented", without being specific as to which stands these are. The reference to "continue to be excluded" has been interpreted by MNR to refer to the ten old growth sites identified in the 1990 report, Reconnaissance Inventory to Locate Old White and/or Red Pine Stands in Site Region 4E of the Ontario Ministry of Natural Resources. The EA Board refers to these ten sites on Page 387 of their decision. These ten sites were excluded from harvesting until the conservation strategy for old growth red and white pine referenced in T&C 103(c) was completed.

With the release of A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems (1995) the requirement to exclude all ten of these sites from harvesting was no longer applicable. Of the original ten sites, MNR protected four in Conservation Reserves under the *Public Lands Act* in 1994 and 1995, two through expansions to Mississagi River and Obabika Provincial Parks in 1996, and one in a Forest Reserve zone in the Ontario Living Legacy Land Use Strategy in 1999. Two of the remaining three sites were not protected because there were on a landform type that was already represented and protected in the expansion to Mississagi River Provincial Park. After an intensive field investigation, it was determined that the third site had been harvested prior to 1960 and did not contain significant amounts of old growth red and white pine.

T&C 103 (e)

Part (e) of T&C 103 specified requirements for recording old growth red and white pine communities as values. The FMP Manual addresses the recording of old growth red and white pine forest communities. Section 1.4.4 of the FMP Manual requires that all sites that contain old growth red and white pine forest communities must be identified on the values maps for the management unit. In addition, Section 2.6.2 of the FMP Manual requires that the supplementary documentation of every FMP will contain the reasons why some sites which contain old growth red and white pine forest communities will not be managed for old growth values.

Sections 3.1.5 and 3.1.8 of this review also reference this requirement.

During the old growth policy development period following the EA Approval, MNR has continued to identify and protect old growth white and red pine ecosystems. Since 1993, over 100,000 hectares of old growth red and white pine forest stands have been protected in provincial parks and conservation reserves using Ontario's ecological land classification. Additional old growth areas have been protected through the Ontario Living Legacy Land Use Strategy.

Synopsis

In response to T&C 103(a), MNR has investigated, with the assistance of public advisory groups, the subject of old growth ecosystems during the term of the EA Approval. This produced numerous documents to aid in policy development and planning, which include:

- A 1993 Interim Report on Conserving Old Growth Red and White Pine.
- A 1994 report entitled Conserving Ontario's Old Growth Forest Ecosystems: Final Report of the Old Growth Policy Advisory Commitee.
- A 1995 strategy entitled A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems.
- A 1997 draft policy proposal entitled A Conservation Strategy for Old Growth Forest Ecosystems on Crown Lands in Ontario.
- A 2001 draft report entitled Old Growth Forest Definitions for Ontario: Draft for Public Review and Comment.

MNR's old growth policy proposal will be developed for the spring of 2003, providing direction for the conservation of old growth forests in Ontario. When finalized, the old growth policy will serve as an environmentally sound conservation strategy, with definitions of old growth specific to Ontario forest conditions.

In response to T&C 103(b) MNR has been providing interim management direction for the conservation of old growth values through a variety of provincial policies, directives and guidelines. Examples include MNR's Statement of Environmental Values, the Forest Operations and Silviculture Manual, the guidelines for marten and pileated woodpecker habitat, the Forest Resource Assessment on Crown Lands in Ontario and the FMP Manual. Many FMPs include management unit objectives for maintaining or increasing the proportion of mature and older age classes, and include requirements for maintaining old growth characteristics during harvesting operations.

In May 1995, MNR published A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems in response to T&C 103(c). The strategy was incorporated into the requirements of the FMP Manual.

The ten old growth red and white pine stands within site region 4E were excluded from harvesting until the conservation strategy for old growth red and white pine was completed, consistent with T&C 103(d).

In response to T&C 103(e), sites found to contain communities of old growth red and white pine forests are identified as values in FMPs. In those cases where candidate sites were omitted from values maps, the FMP records the reasons the site does not constitute old growth white and red pine.

Since 1990, MNR has adopted a number of techniques for the conservation of old growth. Since 1993, over 100,000 hectares of old growth red and white pine forest stands have been protected in provincial parks and conservation reserves using Ontario's ecological land classification. Additional old growth areas have been protected through the Ontario Living Legacy Land Use Strategy.

MNR is making recommendations regarding this term and condition in Section 3.5.4.4 Old Growth, of the Timber Class EA Review.

Social and Economic Analysis - T&C 104

Current Requirement

The EA Board recognized the rapid advancements being made in analytical methods for use in timber management planning. Term and condition 104 required MNR to investigate analytical methods for assessing social and economic advantages and disadvantages, and to develop or adopt the appropriate methodologies for use in timber management planning.

> ***T&C 104***
>
> *Within two years of this approval, MNR shall investigate available analytical methods for assessing social and economic advantages and disadvantages and their applicability to Ontario's timber management operations, and shall develop or adopt appropriate methodologies for use in timber management planning.*

Progress Report

The EA decision speaks to two types of social and economic analysis: the analysis of socio-economic impacts and the estimation of non-timber values (Koven and Martel 1994, pages 340-343). Non-timber 'values' used in this context refers to economic valuation, and not a feature shown on a values map.

Analysis of Socio-Economic Impacts

MNR and external economists developed the Regional Economic Impact Model in 1994-95. Using this model as a basis, MNR consulted with the public during 1996 to help develop a model for use in forest management planning. In 1996, MNR developed the Socio-Economic Impact Model - a computer model that allows the user to predict economic, social and environmental impacts of alternative forest resource uses. The SocioEconomic Impact Model is fully operational. It is continually updated as Statistics Canada updates the underlying input/output database and as Census of Population information becomes available. A new version was produced in 2000 that uses ecological regions and MNR's district boundaries as the basis for its analyses.

The FMP Manual requires that each FMP contain a 'socioeconomic profile' as part of the forest description (FMP Manual page A-34 to A-37). A profile describes a range of social and economic factors of dependent communities, forest resource-processing facilities and the primary uses and users of the forest. Each profile is developed on a custom basis for each management unit by MNR, and is derived from the most recent population census. The FMP Manual requires the production of an updated socioeconomic profile at the end of the plan term, and a comparison of that profile with the profile developed at the beginning of the plan term. The results of this analysis are reported in the management unit report of past forest operations (FMP Manual, Page C-89, lines 8-18).

In addition, socioeconomic impact analysis is used in the forest management planning process. During the development of each FMP, the socioeconomic advantages and disadvantages of management alternatives are assessed using the SocioEconomic Impact Model.

The SocioEconomic Impact Model is also used in support of general resource management planning within the MNR, including analysis associated with implementation of Ontario's Living Legacy Land Use Strategy.

The Canadian Forest Service has developed a series of models similar to the SocioEconomic Impact Model, which measure impacts at the community level. MNR is pursuing the possibility of integrating these community impact models with the Socio-Economic Impact Model.

Estimation of Non-Timber Values

MNR has also sponsored and assisted a variety of research initiatives focusing on non-market valuation techniques and their applicability in Ontario. See the Bibliography and Presentations referenced in this progress report for more information. These initiatives built on a series of reports completed and published under the MNR's Forest Values project in 1993 and 1994. Research outputs included four masters' theses and a number of formal publications. A diverse range of methods and issues were examined including:

- Recreation valuation and congestion.
- Net economic benefit from canoeing in Ontario.
- Social values of wilderness areas in Ontario.
- Economic value of big game hunting.

MNR has undertaken internal investigations of research findings and has developed a methodology to determine non-timber values. The results were documented as an internal report prepared in 1996-97 titled Licence-Based Valuation Method: A Zonal Travel Cost Approach to Valuing Moose Hunting. Through this work, a non-timber values database was developed and used to support the land use decisions being incorporated into Ontario's Living Legacy Land Use Strategy.

A database containing the results of global research findings regarding non-timber values was also constructed. With the appropriate methodological adjustments to reflect Ontario circumstances, this database could be used to provide non-timber values to support resource management decisions by MNR. Using the supporting documentation provided by the database, MNR held a series of workshops in 1998 with MNR technical staff to develop default non-timber values for use in land use planning. Results from the investigation of non-timber values have been used by MNR to support land use planning decisions, which set the context for the forest management planning.

Synopsis

MNR investigated, acquired or developed analytical methods to assess the social and economic advantages and disadvantages associated with forest management planning, as required by T&C 104.

The socio-economic impact analysis modelling MNR requires for forest management planning, allows planning teams to examine the social and economic impacts of various management alternatives. Data used in modelling are continually updated, as new data (e.g., census data) become available. MNR evaluates non-timber values at the land-use planning phase to set the context for the forest management planning.

MNR is making recommendations regarding this term and condition in Section 3.5.4.5 Data Systems and Analytical Methodologies, of the Timber Class EA Review.

Bibliography and Presentations: Social and Economic Analysis - T&C 104

A. MNR Sponsored Research Initiatives

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OMNR "Backgrounder." 1993

Sarker, R. and McKenney, D. "Measuring Unpriced Values in Ontario's Forests: An Economic Perspective Annotated Bibliography." 1993

Theses

Andreana Valla. MSc. "Benefits of Wilderness Canoeing and Camping at Quetico Park: An Application of a Travel Cost Model." Completed in 1994.

Michael Jay. MSc. "The Net Benefits of Backcountry Canoeing in Ontario Wilderness Parks: The Application of Random Utility Methods to Travel Cost Analysis." Completed in 1996.

Stephan Schott. MA. "Travel Cost Demand Models: Discussion and Application to Backcountry Canoeing in Algonquin and Killarney.

Will Wistowsky. MSc** "Benefits of Backcountry Canoeing in Ontario Wilderness Parks." Completed in 1995.

B. External Publications

Boxall, Peter, Jeff Englin and Kimberly Rollins, "Recreation Valuation and Congestion: Empirical Analysis Using Panel Estimators," selected paper presented at the American Agricultural Economics Association Meetings, Tampa, Fla, August, 2000.

Boxall, Peter, Jeff Englin and Kimberly Rollins, "Recreation Valuation and Congestion: Empirical Analysis Using Panel Estimators," selected paper presented at the Canadian Agricultural Economics Association/Canadian Economics Association joint meetings, June 1-3, 2000, in Vancouver, B.C.

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Methods to Non-Timber Uses of Ontario Forests: Decision Support for the Forest Values Project". Submitted to the Ontario Ministry of Natural Resources.

Rollins, Kimberly. "Measuring Ecosystem Values," Chapter 16 in A Guidebook for Integrated Ecological Assessment, edited by Mark E. Jenson and Patrick S. Bourgeron. Springer-Verlag NY, 2001, pp 221-244.

Rollins, K.S. and W. Wistowsky. "Net Economic Benefits From Canoeing in Ontario Wilderness Parks". Conference paper presented at Forestry and The Environment: Economic Perspectives II. Banff, Alberta. October.1996

Rollins, Kimberly, Peter Boxall and Jeff Englin, "The Costs of Congestion for Different Elements within a Recreational Experience," presented at the Fourth International Conference of the Science and Management of Protected Areas Association, May 14 to 19, 2000 at the University of Waterloo, Ontario, Canada.

Rollins, Kimberly, William Wistowsky and Michael Jay. "Wilderness Canoeing in Ontario: Using Cumulative Results to Update Dichotomous Choice Contingent Valuation Offer Amounts," Canadian Journal of Agricultural Economics, 45(1997) 1-16.

Sarker, Rakhal and Yves Surry. 1998. Economic Value of Big Game Hunting: The Case of Moose Hunting in Ontario. Journal of Forest Economics, 4(1): 29-60.Rollins, Kimberly, William Wistowsky. "Benefits of Backcountry Canoeing in Ontario Wilderness Parks", Journal of Applied Recreation Research,Vol. 22, No.1, 9-31, 1997.

"The Social Values of Wilderness Areas in Ontario: A 1993 Study of the Opinions of Backcountry Users." A contingent valuation mail-back questionnaire distributed to wilderness canoeists on-site. 88% overall response rate with over 2,400 usable returned surveys. 1993.

Wistowsky, W. and K. Rollins, "Getting Results with Economic Valuation: Survey Design and Implementation in Park Management," selected paper presented at the Fourth International Conference of the Science andManagement of Protected Areas Association, May 14 to 19, 2000 at the University of Waterloo, Ontario, Canada.

Timber Production Policy - T&C 105

Current Requirement

Harvest and renewal methods received a great deal of the EA Board's attention, but so did the level of harvest and renewal. The EA Board was concerned that MNR's level of renewal funding, which was declining at the time due to reductions in government funding, might not be sufficient to meet the future demand for Ontario forest products. In its decision, the EA Board found MNR's 1972 Forest Production Policy to be out-of-date, and ordered that it be replaced with a new timber production policy addressing the matter of harvest and renewal levels (Koven and Martel 1994, p.379).

The 1972 provincial Forest Production Policy referred to by the EA Board contained forecasts of future timber demand, timber harvest availability, forest renewal requirements and forest management funding. The provincial timber production target was used to set the investment level required to support the goal of 9.1 million cunits (25.8 million cubic metres) of wood annually by the year 2020. It was translated into an implementation schedule that provided MNR administrative regions and districts with annual targets for harvesting, renewal, site preparation, tending, marking, and stock production activities.

At the time of the EA hearings, MNR was working to revise this policy. By the late 1980s, the Forest Production Policy was considered to be outdated in its assumptions of Ontario's forest resources. Crown timber supplies were changing as a result of changes in the age of the forest and reductions in the size of the land base available for timber production. As a result, the EA Board ordered T&C 105, which required MNR to produce and approve a new timber production policy and related implementation schedule by December 31, 1994.

> ***T&C 105***
>
> *MNR shall complete and submit for approval a new Timber Production Policy and related implementation schedule by no later than December 31, 1994. The Timber Production Policy shall be updated thereafter every five years.*
>
> (a) *The Timber Production Policy shall be prepared in consultation with the public generally and with input from the various advisory committees described in Appendix 1.*
>
> (b) *The Timber Production Policy shall provide clear quantifiable objectives for a sustainable level of harvest and regeneration on a 20-year projection as well as for the five-year term of the policy. These objectives shall be provided for the entire Area of the Undertaking and for all individual management units.*
>
> (c) *The Timber Production Policy shall develop estimates of funding required to meet regeneration objectives for the Area of the Undertaking and for individual management units.*
>
> (d) *The sustainable harvest level and regeneration objective for the province in the updated Timber Production Policy shall be reported in the State of the Forest Report (Appendix 22, section 1(i)).*"

Progress Report

While MNR's original intent was to update the 1972 Forest Production Policy, a significant change in strategic policy direction had occurred in the meantime. This change in direction necessitated a re-evaluation of the Timber Production Policy Project in mid-1994 and the adoption of a completely new approach to determining timber production levels. The timber production policy that emerged from this new direction is known today as the Forest Resource Assessment Policy.

The Forest Resource Assessment Policy was developed through a public consultative process that involved three facilitated public workshops and reviews of background information reports from 1992 through to 1994. The consultation focused on provincial stakeholder groups as well as local and regional groups that had expressed an interest in the Timber Production Policy Project. Approximately 180 interest groups were asked to participate. The major stakeholder groups that participated were forest industry, Aboriginal associations and communities, environmental organizations, community groups, chambers of commerce, professional associations and educational institutions. In September 1994, MNR released A Discussion Paper on the Forest Resource Assessment Policy (MNR 1994c) for public review and comment. The document was distributed widely to more than 250 external groups and individuals.

The Forest Resource Assessment Policy was submitted and approved by MNR and endorsed by the Minister of Natural Resources in December 1994. This document contained: 1) the proposed policy; 2) a preliminary provincial assessment of Ontario's forest resources; 3) preliminary forecasts of timber production potential, forest renewal activities and silvicultural costs; and 4) a record of stakeholder involvement.

The Provincial Forest Policy Committee reviewed the Forest Resource Assessment Policy in May 1995.

MNR's Deputy Minister released the approved interim policy in September 1995 (MNR 1995f). At that time, the MNR land use and resource management planning process was about to undergo a major revision too, and it was recognized that the policy would require an update review prior to the five-year review required under T&C 105. For this reason, it was released as an interim document.

Compliance with T&C 105 was raised before the EA Board when it reconvened to review the draft FMP Manual in 1995. The EA Board concluded that MNR's approach complied with the term and condition and stated "…in our opinion the objectives of the timber production policy as described in Condition 105 will be met in the FRAP [Forest Resource Assessment Policy]" (Koven and Martel 1995, Page 17).

The Forest Resource Assessment Policy reinforced the strategic direction that was sent out in the MNR policy document Direction '90s, the Policy Framework for Sustainable Forests, and the *Crown Forest Sustainability Act*. The new direction called for Ontario's Crown forests to be managed sustainably to provide a range of benefits, not just for timber production. This shift in strategic direction also meant that MNR would no longer be setting provincial-level timber production targets using a top-down approach (i.e., through an implementation schedule). Instead, the availability of forest resources for industrial use is determined from the bottom-up, using the process set out in the *Crown Forest Sustainability Act* and the FMP Manual.

Harvest and renewal levels are now set at the management unit level following direction contained in the FMP Manual. FMPs document the availability of forest resources, including timber, and provide clear quantifiable objectives for a sustainable level of harvest and regeneration. Estimates of funding required to meet regeneration objectives are provided by way of a forecast of expenditures for silvicultural activities. FMPs also identify management alternatives to achieve the stated objectives and assess the long-term availability of forest resources, such as timber products. Local Citizens Committees participate as an integral part of the forest management planning process at the management unit level.

The policy for forest resource assessment provides common principles and standards for decision-making at local, regional and provincial levels, and sets policy direction to guide assessments of sustainable forest management. In keeping with this, MNR prepares an assessment of Ontario's forest resources every five years, focusing on the sustainability of Ontario's forest resources. The long-term availability of forest resources and timber supply are determined through the MNR land use and resource management planning processes beginning at the management unit level. The results are aggregated upward to the regional level, and then reported on at the provincial level in the State of the Forest Report.

Given this new 'bottom-up' approach, namely the aggregation of management unit level results upwards to the provincial level, the requirement for an implementation schedule was no longer relevant. The implementation targets for harvesting, renewal, site preparation, etc. are developed for the individual management unit and documented in each FMP.

Since 1995, the *Crown Forest Sustainability Act* has provided for funding for forest renewal by directing a portion of the Crown charges paid by the forest industry to the Forest Renewal Trust and Forestry Futures Trust. These trusts provide the necessary funding to meet forest renewal objectives for each management unit. Funding requirements are determined at the management unit level subject to rates set by the government. These trusts have proven to be a better mechanism for securing long-term funding for forest renewal than the traditional mechanisms of annual government budget allocations that were of concern to the EA Board.

In 1996, MNR released the first forest resource assessment report, An Assessment of Ontario's Forest Resources. This assessment provided current information and long-term estimates of supply for each of MNR's three administrative regions. It represents the current state of information and modelling capabilities, and incorporates information and knowledge supplied by forest managers, planners, and analysts throughout Ontario. The document presents the results of management unit assessments aggregated to regional and provincial levels.

The most recent assessment is included in the State of the Forest Report, 2001, which documents forest sustainability at the provincial level. The State of the Forest Report, 2001, includes forecasts of wood supply by management unit, based on the quantifiable objectives for a sustainable level of harvest and regeneration, including funding estimates, from current approved FMPs. Also included is the Report on Wood Supply in Ontario, which provides regional wood supply projections.

Term and condition 105 requires the timber production policy to be updated every five years. The Forest Resource Assessment Policy contains a five-year update provision. In 1996-97 after the MNR land use planning system was changed, MNR reviewed and updated the policy before the normal five-year cycle had lapsed. In the fall of 1997, the next version of the policy was posted on the Environmental Registry for public review and comment. No written submissions were received. In 1998, following a review by the Provincial Forest Policy Committee and the decision notice on the Environmental Registry, the MNR Deputy Minister approved the updated policy entitled, Forest Resource Assessment on Crown Lands in Ontario. These revisions provided consistency with, and included linkages to, Ontario's forest policy and legislative framework, regional land use planning, and forest management planning and reporting.

Reports on the assessment of Ontario's forest resources will forecast resource potential and are a component of the forest evaluation process used to report on progress in achieving forest sustainability objectives. Reports will contain information derived from the three MNR administrative levels – provincial, regional and district. Information required for assessment will be found in documents such as independent forest audits, compliance monitoring reports, management unit annual reports, management unit reports of past forest operations, the Forest Resources of Ontario reports, Assessment of Ontario's Forest Resources reports, and State of the Forest Reports.

In 2000/2001, MNR staff reviewed the 1998 version of the policy to determine whether it was still current and relevant. At that time, it was felt that no significant changes were required, but that a further review would occur in 2002. That review is now underway.

Synopsis

MNR adopted a different approach than the 1972 Forest Production Policy but has met the requirements of T&C 105 through the 1994 Forest Resource Assessment Policy and the updated 1998 Forest Resource Assessment on Crown Lands in Ontario. Compliance with T&C 105 was raised before the EA Board when it reconvened to review the draft FMP Manual in 1995. The EA Board concluded that MNR's approach complied with the term and condition (Koven and Martel 1995, Page 17). Both the 1994 and 1998 versions of the policy were prepared in consultation with the public.

Since 1995, the *Crown Forest Sustainability Act* has provided for funding for forest renewal by directing a portion of the Crown charges paid by the forest industry to the Forest Renewal Trust and Forestry Futures Trust. These trusts provide the necessary funding to meet forest renewal objectives for each management unit.

The policy direction contained in Forest Resources Assessment on Crown Lands in Ontario reinforces strategic direction set out in other MNR policy documents. MNR no longer sets provincial-level timber production and renewal targets. Instead, the level of harvest and renewal is determined at the individual management unit level to meet the various objectives - both timber and non-timber - set out in the FMP.

MNR will continue to report to the public on harvest and renewal levels, and on regeneration expenditures.

Roadless Wilderness Policy - T&C 106

Current Requirement

T&C 106 requires MNR to develop a provincial policy on roadless wilderness areas by May of 1997.

> ***T&C 106***
>
> *Within three years of this approval, MNR shall develop a provincial policy on roadless wilderness areas.*

Progress Report

Ontario has a long history in managing wilderness values. These values are always recognized in land use and resource management planning undertaken by MNR.

Wilderness is a concept used to describe an ecosystem condition. A person's concept of wilderness is based on personal values and a sense of the benefits provided by wilderness. As a result, there is no single definition of wilderness. The 1978 Ontario provincial park policy statement defined wilderness parks as "...substantial areas where the forces of nature are permitted to function freely and where visitors travel by non-mechanized means and experience expansive solitude, challenge and personal integration with nature" (MNR 1992d, Appendix 1, Page A-5). The 1978 policy redefined primitive parks as wilderness parks, and proposed that one wilderness park and at least one complementary wilderness zone in another class of park be established in each of Ontario's natural regions.

By the early 1980's, substantial wilderness zones had been created throughout Ontario. Efforts to protect wilderness were renewed in the 1990's. As examples, a new wilderness zone was added to Algonquin Park and there was a major addition to Wabakimi Park. A new category of protected area, called conservation reserves, was also created to help protect wilderness values.

In response to T&C 106, MNR developed and released Ontario's Approach to Wilderness: A Policy in 1997. The policy stated that wilderness values will be accounted for under the auspices of land use planning, resource management planning, policy, legislation, and management programs developed in support of sustainable natural resource management in Ontario. This policy:

- Confirms Ontario's commitment to wilderness protection through existing Wilderness Park and Wilderness Zone targets, and provides direction that will result in the completion of Ontario's system of Wilderness Parks.
- Addresses the contribution of other parks and protection areas to the protection of wilderness values.
- Addresses the consideration of wilderness values through ongoing management activities on the intervening landscapes and waterscapes outside parks and protected areas.

The first two commitments are being addressed in a variety of ways. Ontario's Living Legacy Land Use Strategy provided for an increase in parks and protected areas to 12% of Crown lands within the Area of the Undertaking, and promoted the completion of the Ontario Parks class system. In southern Ontario, MNR and partners are implementing a variety of programs to protect natural areas and wilderness values. These include Nature's Best: Parks and Protected Areas: A Framework and Action Plan, Carolinian Canada; the Conservation Land Tax Incentive Program; and Legacy 2000 – MNR's partnership with the Nature Conservancy of Canada.

To address the third commitment, MNR formed the Wilderness Working Group. This group is an internal committee assessing current programs to determine whether additional techniques are required to manage wilderness characteristics on intervening landscapes and waterscapes within the Area of the Undertaking.

In February 1999, the Ministry of the Environment advised MNR that a request for an investigation had been received under the *Environmental Bill of Rights* with respect to MNR's compliance with T&C 106. The Ministry of the Environment undertook a review and on April 13, 1999, concluded that MNR was in compliance with T&C 106.

In Ontario's Living Legacy Land Use Strategy, MNR concluded that the wilderness park class target has been achieved to the extent possible within the Ontario Living Legacy planning area (MNR 1999a, Page 6). Although no new wilderness parks were created, several of the existing wilderness parks were expanded. By definition, wilderness parks and wilderness zones in other types of parks are roadless.

Roads and any other types of development are limited in many parks and protected areas. The land use strategy created 378 new or expanded protected areas, including seven protected areas that are larger than 50,000 hectares. Although not classified as wilderness parks, many of these protected areas provide wilderness characteristics.

Consideration for roads within parks and protected areas generally occurs through park planning. The land use strategy, and subsequently the Ontario Forest Accord, established broad direction concerning road access within these newly created parks and protected areas. In general, these areas are not to have roads within their boundaries, although provisions for roads have been made in some cases. The Ontario Forest Accord required the development of a process to increase forest wood supply and provisions to establish new parks and protected areas, to complete ecological representation, in conjunction with sharing permanent increases in wood supply. This process of sharing permanent increases in wood supply between additional parks and protected areas and increased industrial supply is described in the final report of the Ontario Forest Accord Advisory Board, entitled Room to Grow.

MNR is continuing to provide direction for the management of wilderness values on intervening landscapes and waterscapes. This is occurring through a variety of existing policies and ongoing resource management and operational initiatives. For example, through access restrictions it is possible to maintain the undeveloped and roadless nature of Crown land areas that exhibit wilderness characteristics.

Synopsis

In 1997, MNR released Ontario's Approach to Wilderness: A Policy, which fulfills the requirements of T&C 106.

This policy confirms Ontario's commitments to complete a system of wilderness parks and zones, addresses the contribution of other parks and protected areas to the protection of wilderness values, and addresses the consideration of wilderness values.

MNR is committed to following the direction provided by this policy. The policy committed MNR to establish wilderness parks and wilderness zones, which was achieved through Ontario's Living Land Use Strategy. Future initiatives consistent with the Ontario Forest Accord may result in new parks and protected areas, subject to permanent increases in wood supplies.

MNR is making recommendations regarding this term and condition in Section 3.5.4.7 Roadless Wilderness Areas Policy, of the Timber Class EA Review.

Wildlife Habitat Supply Modelling and Landscape Management Methodologies - T&C 107

Current Requirement

T&C 107 required MNR to examine wildlife habitat supply modelling methodologies and landscape management methodologies as potential means of addressing biological diversity concerns. The EA Board recognized rapid advancements were occurring in both computer modelling capabilities and methodologies which had potential to answer concerns about biodiversity.

> ***T&C 107***
>
> *During the term of this approval, MNR shall continue to examine wildlife habitat supply modelling methodologies, and landscape management methodologies as potential means of addressing biological diversity concerns in timber management planning.*

Progress Report

MNR has examined wildlife habitat supply modelling methodologies, and landscape management methodologies through three major areas of activity. These are:

- Habitat supply analysis, which was initially conducted through Forest Management Branch and subsequently the regional Science and Information Units (formerly Science and Technology Units, called Habitat Supply Modelling).
- Development of a multi-scale habitat assessment model, to explore alternative harvest patterns, which arose out of the Moose Guidelines Evaluation Program, led by a research team at the Centre for Northern Forest Ecosystem Research.
- Landscape assessment methodologies, led by a research team working under the Forest Landscape Ecology Program at the Ontario Forest Research Institute.

Several components of each major area of activity are described separately in this progress report. Throughout the development of these major areas of activity there has been coordination, integration, and sharing of knowledge and techniques, between the initiatives. Many components have linkages to other terms and conditions and policy initiatives, which are identified in this progress report.

Habitat Supply Modelling

By the mid 1990's, non-spatial habitat suitability models based on a design pioneered in the United States, were developed for forest dwelling wildlife species found in the Area of the Undertaking. In 1996, non-spatial habitat supply modelling was incorporated into forest management planning through the use of a forest modelling tool, the Strategic Forest Management Model. This modelling tool uses the wildlife habitat suitability models developed for each MNR administrative region within the Area of the Undertaking and has become the accepted standard for calculating non-spatial wood and wildlife habitat supply. The Strategic Forest Management Model can be adjusted to accommodate new and better information on the use of habitats by wildlife. The wildlife habitat suitability models used to calculate habitat supply are regularly updated as our knowledge base grows. In 1997/98, a spatial model called STANLEY, developed by the University of New Brunswick, was introduced to Ontario (Remsoft Inc. 1996). This model is being evaluated for use with the Strategic Forest Management Model to improve the ability to predict future forest supply through the allocation of harvest areas over space and time. Some forest management planning teams have used STANLEY on a pilot basis.

A geographic information system, ArcView-based software package - the Ontario Wildlife Habitat Analysis Models - was developed by MNR's southcentral, northeast and northwest science and information units to do spatial habitat supply analysis for the Great Lakes-St. Lawrence and the Boreal Forest Regions of Ontario. The Ontario Wildlife Habitat Analysis Models have been used in forest management planning in most of the management units within the Great Lakes-St. Lawrence and portions of the Boreal Forest Region beginning with the 1999-2004 plans. They are used mainly to model habitat supplies for the four provincially featured species, namely moose, deer, pileated woodpecker and pine marten, and assist in the implementation of the associated guidelines for marten and pileated woodpecker. The Ontario Wildlife Habitat Analysis Models can also be used to model habitat supplies for locally featured species, such as the red-shouldered hawk.

At the Centre for Northern Forest Ecosystem Research, other geographic information system-based models have recently been developed. A model known initially as Habitat Analyst was improved upon and rolled into a more comprehensive model called Patch Analyst. Patch Analyst is used to help match planned disturbance patterns with those that occur naturally, and is also capable of spatial habitat modelling and predictions of future habitat supply. Ontario Marten Analyst was developed collaboratively with the Northwest Science and Technology Unit and the Centre for Northern Forest Ecosystem Research. Ontario Marten Analyst is used in the application of the marten habitat guidelines in MNR's Northwest Region.

A large number of publications on the use, application and findings from the habitat supply modelling projects have been published, including implementation manuals such as the Forest Management Guidelines for the Provision of Marten Habitat.

Multi-Scale Habitat Assessment Model

This program area has close linkages with the Moose Guidelines Evaluation Program. See progress report for T&C 80 Appendix 19(1) Long-term Scientific Studies-Moose Habitat for more information. The objective of the program was to translate knowledge of landscape pattern and habitat suitability into spatial habitat models that would allow MNR to predict and evaluate the effects of changing habitat configuration on wildlife populations.

A spatial modelling, geographic information system-based program has been developed called Landscape Scripting Language. This model can be used to very quickly assess a management unit's Forest Resource Inventory in terms of patterns of habitat suitability, and do this over multiple spatial scales. Different 'scripts', or models can be written using this software to assist in the assessment of different objectives. One such script, which is in development, is called the Cut Pattern Assessment Tool, which is used to compare alternative planning approaches.

Landscape Scripting Language and its related models like the Cut Pattern Assessment Tool will provide forest management planners with the ability to rapidly assess habitat supply for any species at any spatial scale. The flexibility inherent in Landscape Scripting Language permits development of habitat signatures for wildlife species in any forest region. These habitat signatures can then be used to predict how closely future harvest patterns and the resulting habitat supply, fit the needs of a single species or a combination of species. These products are in the final stages of development and will be useful in addressing biological diversity through forest management planning.

Forest Landscape Ecology Program

This program addresses the landscape management component of T&C 107 and development of landscape assessment methodologies to support forest management planning at local and landscape scales. Landscape assessment methodologies assess the effects of natural change and human activity on biodiversity and forest sustainability at the landscape scale. A forest landscape is an ecological system composed of a mosaic of forest cover types, and is generally referring to an area of at least several square kilometers. In addition to a large number of research and technology transfer publications, the program can report on four major accomplishments.

1. Digital Database Development

   Historical fire boundaries, using MNR maps and satellite imagery, were digitized and overlaid with various ecological and administrative templates (e.g., Hills Site Region; management units). With the Ontario Fire Atlas CD, users can evaluate historical fire patterns, shapes and sizes.

   A provincial database of surficial geology was compiled and overlaid with various ecological and administrative templates to produce a CD-ROM based digital atlas (Perera et al. 1996).

   An MNR Intranet website was built that provides MNR staff with an extensive set of current landscape ecology references (Forest Landscape Ecology Program 2002).

2. Landscape Ecological Models and User Tool Development

   Computer software and tools such as the LEAP II: A Landscape Ecological Analysis Package for Land Use Planners and Managers (Perera et al. 1997), Ontario's Forest Fire History: An Interactive Digital Atlas, and the Boreal Forest Landscape Dynamics Simulator (Perera et al. 2000b), were designed to quantify landscape patterns, query and analyze historic fire data, predict fire regime, estimate net primary productivity and predict changes in boreal forest landscapes after large catastrophic events such as fire and blowdown. Methods of predicting species richness - areas with many species are considered to be 'species rich' - as a function of scale were investigated and results published. The results of studies and analysis of net primary productivity, namely rate of plant and tree growth, are used in forest management planning.

3. Policy Support

   Several analyses were undertaken to summarize fire data in concert with ecological and administrative information to assist in the development of the Forest Management Guide for Natural Disturbance Pattern Emulation. The Boreal Forest Landscape Dynamics Simulator was used to provide natural disturbance benchmarks as part of the requirements in Clause 27 of the Ontario Forest Accord. Net primary productivity estimates and landscape pattern index values were derived to support forest management planning.

4. Technology Transfer and Linkages

Direct support for users of geographic information systems and landscape ecological analyses was provided to a wide array of MNR clients, as well as the Canadian Forest Service and Parks Canada. In addition to the support of T&C 107, analysis and information within the program supported delivery of other terms and conditions, including T&C 81 Provincial Wildlife Population Monitoring and Appendix 22, the five year, State of the Forest Report.

Synopsis

The wildlife habitat supply modelling methodologies and landscape management methodologies examined and developed by MNR to address biological diversity concerns have fulfilled the requirements of T&C 107. MNR is now working to further incorporate these new methods and models and the information they provide, into forest management planning. These methods and models will continue to provide forest management planners with the ability to undertake landscape analysis, predict future landscapes as a result of forest management operations, and to also examine the effects of these changes on wildlife habitat supply. In addressing biological diversity, MNR will continue to improve upon its understanding of wildlife habitat requirements.

MNR is making recommendations regarding this term and condition in Section 3.5.4.5 Data Systems and Analytical Methodologies, of the Timber Class EA Review.

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Geographic Information Systems - T&C 108

Current Requirement

In recognition of the rapid advancements occurring in geographic information systems, the EA Board required MNR to continue the development of such systems for use in timber management planning and to transfer the technology to its field offices.

> ***T&C 108***
>
> *During the term of this approval, MNR shall continue its development of Geographic Information System technology for use in timber management planning in Ontario and the transfer of that technology to field offices in the Area of the Undertaking.*

Progress Report

At the time of the EA hearing, it was recognized geographic information system technology would be essential for the full development and implementation of the sophisticated models for resource management MNR was pursuing. The EA Board recognized geographic information system technology would be needed for both province-wide applications as well as those related to single management units. MNR had begun implementing geographic information systems at the time of the EA hearing and was expected to have limited capability in its field offices by 1997.

As required by the EA Board, MNR continued to develop geographic information system technology and transfer that technology to field offices for use in forest management planning and other aspects of MNR business. Within the Area of the Undertaking, all district and area offices were provided with geographic information system hardware, software and training by the 1995/96 fiscal year. Geographic information system technology has since been put into practice in all regional, science and head office locations. Geographic information system technology is still relatively new and changes to the technology are occurring at a rapid rate. As a result, there has been annual support to geographic information systems. MNR selected a geographic information system software standard in 1994 and a review of the software environment was carried out in 1999.

Staffing requirements at all levels have been reviewed and adjusted regularly to reflect planning and program needs. As geographic information system technology has become an integral part of MNR's business, an increasing number of staff from all program areas and all office levels, are being trained with use of the technology. Staff, programs and projects have all benefited from geographic information system technology, and new and updated data and information are continually being added to the systems.

During the term of the EA Approval, MNR developed the Natural Resource Values Information System, based on a geographic information system framework. This information system established data mapping standards for values and provides for their systematic update and storage. Timber values, fish and wildlife habitat values and other natural resource values have all been incorporated into Natural Resource Values Information System.

The Natural Resource Values Information System also provides for values mapping of operational prescriptions, for example the layout of a harvest block requiring area of concern planning, such as a moose aquatic feeding area.

In addition, a number of analytical models that are based on geographic information systems were developed or acquired by MNR, such as the Ontario Wildlife Habitat Analysis Models and Ontario Marten Analyst, to assist in forest management planning.

Geographic information system technology was instrumental in MNR's Lands for Life initiative by being able to provide one set of data everyone could share and build upon. At the onset of the process, geomatic service centres were established in Thunder Bay, South Porcupine and Peterborough. These centres provided advice, managed data, conducted analyses, produced reports and maps, built web sites, developed applications and quickly provided access to geographic information and analysis. As such, the use and application of geographic information system technology was an important element supporting the implementation of T&C 110 regarding district land use guidelines.

MNR is Ontario's lead agency with respect to land-related information and geographic information systems. District information in Natural Resource Values Information System has been merged into a provincial data set called the Ontario Land Information Warehouse, which is linked to the Land Information Ontario Program. This Program makes geographical information accessible and provides for integration across government and its partners.

When the Forest Information Manual was regulated under the *Crown Forest Sustainability Act*, the exchange of certain information and information products, including forest resource inventory, between MNR and forest resource license holders, became mandatory. Geographic information system technology has facilitated this requirement. The forest industry and many other resource partners also make use of geographic information system technology, facilitating the exchange of information.

Synopsis

With the development and deployment of geographic information system technology throughout MNR, and the widespread use of the technology in forest management planning, the requirements of T&C 108 have been met. Improvements in geographic information system technology and MNR's use of the technology are expected to continue. A highly skilled workforce trained in the use of geographic information system technology ensures the potential benefits of the technology are realized.

MNR is making recommendations regarding this term and condition in Section 3.5.4.5 Data Systems and Analytical Methodologies, of the Timber Class EA Review.

Professional and Technical Training Programs - T&C 109 and Appendix 23

Current Requirement

The EA Board recognized the need to ensure that the knowledge of persons involved in the planning and implementation of forest management activities is continually upgraded. Term and condition 109 required MNR to further develop comprehensive professional and technical training programs to ensure that the knowledge of those persons involved in the planning and implementation of forest management activities is continually upgraded. The training programs were to be developed in specified subject areas.

> ***T&C 109***
>
> *MNR shall further develop comprehensive professional and technical training programs to ensure that the knowledge of those persons involved in the planning and implementation of timber management activities is continually upgraded. Particulars of this condition are set out in Appendix 23.*

> ***Appendix 23: Continuing Education And Training***
>
> 1. *Training programs shall be developed, or further developed, in the following subject areas:*
>   - *(a) the timber management planning process and its application;*
>   - *(b) the application of implementation manuals;*
>   - *(c) data collection requirements and methodologies;*
>   - *(d) those analytical methods for assessing social and economic advantages and disadvantages of timber management activities which are applicable to Ontario's timber management operations, (as described in Condition 104);*
>   - *(e) monitoring requirements and methodologies;*
>   - *(f) the results of relevant scientific research;*
>   - *(g) other specific professional and technical training in specific subject areas, as training needs are identified from time to time;*
>   - *(h) expand training for woodland workers to cover all implementation manuals and aspects of TMP that MNR believes would be useful for field operations.*

Progress Report

(a) The forest management planning process and its application

Forest management planning training is a key training program in MNR. MNR has developed a modular approach to FMP training. This training has been provided to FMP planning teams and Local Citizens Committees, at strategic stages in the planning process, with the introduction of the FMP Manual in 1996. The content of the training modules primarily deals with the requirements of the FMP Manual and emphasizes changes to the planning process from the old timber management planning manual. Eleven training modules are offered for one planning cycle:

1. Introduction to Forest Management Planning – Train the Trainer

2. Data Preparation
3. Overview
4. Sustainable Forest Management Model Tool
5. Developing Objectives
6. Developing Silvicultural Ground Rules
7. Sustainable Forest Management Model
8. Analyzing Management Alternatives
9. Socioeconomic Impact Model
10. Operational Planning
11. Reviewer's Workshop

Each of the eleven FMP training modules is delivered annually by MNR's regional and main office planning staff, using a curriculum that is developed and updated with the assistance of MNR staff from other program areas. The general approach has been well received by planning team members.

Each training course provides participants with training materials, such as instructor notes and handouts, or in some cases CDs with the PowerPoint presentations. The location and venue of the individual training courses vary depending on the geographic locations of the planning teams involved in a particular year and the number of participants.

MNR offers additional planning-related training, such as a module on annual work schedule and annual reporting requirements, to a broader audience on a yearly basis. This workshop was delivered by teleconference in the fall of 2001, which allowed more participants from a wider area to be involved. MNR also develops and delivers training to support the application of new models used in forest management planning.

In 2001, over 450 participants attended training and a full time FMP Training Coordinator was hired. The delivery of FMP training is a priority in MNR, and has been very successful in providing an upgraded and comprehensive knowledge of Ontario's planning process to participating planning teams, and other MNR and industry staff.

FMP teams are trained early in the planning process on strategic landscape and wildlife habitat modelling. MNR specialists assist teams in developing methodological approaches for identifying current landscape configuration and amount of habitat for a wide range of wildlife species. This range of species requires different types of forest to supply food; cover from extreme temperature and/or predators, and migration. Strategic modelling involves projecting the amounts of habitat into the future at least 100 years and ensuring that habitat levels do not drop below an established lower threshold, or what is referred to as the lower bound of sustainability, over time.

FMP teams are also trained on the use of habitat matrices that were developed by MNR biologists and scientists to provide consistent and practical application of modern habitat management theory. In addition, planning teams are instructed in the principles of landscape ecology that link landscape pattern (the size, shape and arrangement of forest types) with landscape function (how landscapes provide eco-services like habitat, water quality, etc). They are trained in the use of landscape pattern analysis techniques using computer analysis tools (e.g., Patch Analyst) to measure landscape pattern and assess how proposed forest management activities will affect future pattern and consequently landscape functions. Training FMP teams in both landscape and wildlife habitat modelling assists them in formulating and evaluating objectives to sustain forest benefits.

(b) The application of implementation manuals

Training regarding the application of implementation manuals occurs as part of annual FMP training modules. Important features of the guidelines are highlighted to planning teams for their use during the preparation of FMPs and annual work schedules. For instance, the silvicultural guides are highlighted during the 'Silvicultural Ground Rules' module. Many of the wildlife-related guidelines are discussed at the 'Developing Objectives' module.

During FMP preparation and implementation, extension and advice on specific requirements in implementation manuals is provided to planning teams by MNR's regional specialists and biologists, and main office staff. This ensures continual communication, and subsequent interpretation, of the requirements of the implementation manuals – i.e. the expertise is available and used readily.

Training for new implementation manuals is developed and delivered as part of the guideline preparation process, cognizant of the needs of those implementing the guide. These training sessions are available to all MNR and forest industry staff who will be involved in their implementation, and other interested groups. Such programs are often included as agenda items as part of other meetings, to help reach the greatest audience in the most efficient means possible.

In the fall of 1997, MNR conducted a series of guideline training sessions to provide an overview and introduction to some of the recently approved guides to MNR, forest industry staff and some non-governmental organizations. The guidelines discussed at the workshops include:

- Forest Management Guidelines for the Protection of the Physical Environment
- Forest Management Guidelines for the Provision of White-tailed Deer Habitat
- Selected Wildlife and Habitat Features: Inventory Manual for Use in Forest Management Planning
- Silvicultural Guide for the Great Lakes – St. Lawrence Conifer Forest in Ontario
- Silvicultural Guide for Managing Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario
- Silvicultural Guide for the Tolerant Hardwood Forest in Ontario

These workshops also provided training with respect to some other existing guidelines.

More recently, a large training and communications effort has been undertaken in regards to the new Management Guidelines for Forestry and Resource-Based Tourism, released in 2001. A consortium of MNR, forest industry and tourism industry persons delivered six training workshops across northern Ontario in the fall of 2001. Presentations on the guidelines has been made to Local Citizens Committees, Regional Advisory Committees and MNR senior managers. In addition, presentations and meetings were held with numerous stakeholders, including audiences from the Northern Ontario Tourist Outfitters Association, Ontario Federation of Anglers and Hunters, Ontario Prospectors Association, Partnership for Public Lands, Ontario Fur Managers Association and Ontario Lumber Manufacturers Association. A special effort has also been made to communicate the new direction to MNR staff for mapping of tourism values.

As another example, training on the detailed requirements of the Forest Management Guidelines for Natural Disturbance Pattern Emulation is being developed for the 2003 and 2004 planning teams, the first FMPs that will be required to implement the guide. In addition, an overview presentation has also been developed and delivered to Local Citizens Committees and other groups internal and external to MNR.

(c) Data collection requirements and methodologies

There have been a number of new training programs developed and implemented by MNR with regards to data collection requirements and methodologies.

The Forest Information Manual, regulated in 2001, prescribes the requirements, standards, roles and responsibilities, timelines and conditions for exchanging forest information and products. Through the Forest Information Manual, the sharing of information and information products between MNR and Sustainable Forest Licensees has become mandatory. A training program has been provided to Sustainable Forest Licensees and MNR staff to support the implementation of this new manual. An overview of the manual was provided to MNR, the forest industry and other interested practitioners through a series of training courses in 2001. Training on the technical specifications and standards for exchanging and maintaining digital information prescribed by the manual will be provided as the manual is implemented. A group of MNR and forest industry staff have also been established to provide ongoing support on the implementation of the manual and to provide a feedback mechanism to address issues related to implementing the new manual.

In 1994, MNR released the revised Ontario Wetlands Evaluation System: Northern Manual, which provides a classification system for wetlands and a system for the determination of provincially significant wetlands. Appropriate MNR field staff have been trained in wetland evaluation. As well, consultants are available who can provide this service.

Wildlife habitat information is a requirement of forest management planning to ensure the habitat needs of wildlife are accommodated. Most wildlife habitat information is recorded as a value (e.g., a moose aquatic feeding area), which can be spatially placed on a map and protected with the appropriate area of concern planning. The MNR produced an implementation manual, the Selected Wildlife and Habitat Features: Inventory Manual; for use in forest management planning to help provide direction on how to collect, record, rank and map wildlife habitat values. A segment on the use of this manual was included in the guideline training workshops of 1997.

MNR staff provided yearly training to significant number of people across the province on the present Growth and Yield Program since the EA Approval. Participating groups include forest industry, First Nations, the academic community, MNR district staff, Ontario Parks staff and private consulting groups. In addition, staff within the Growth and Yield Program have been actively involved in training students at Lakehead University, Sault College, Sir Sanford Fleming and various high schools throughout northern Ontario. To date, well over 500 students have been introduced to growth and yield concepts and mensuration techniques used in this program.

Term and condition 97 required MNR to develop the Forest Ecosystem Classification Program, which would include the examination of improved inventory and mapping technologies, and the enhancement of technology transfer and training programs. As a result, MNR developed an ecological land classification, which is a hierarchical approach to classifying all land-based environments. Extensive training in the use and application of ecological land classification has been offered to MNR field staff, forest industry staff and consultants. Approximately 6-10 workshops are held annually. Extension and advice is also provided by MNR's ecological land classification experts. Comprehensive training materials using audio-visual techniques have been employed to support transfer, including the availability of a CD based photo-set of the subject matter covered in training sessions.

MNR is currently implementing a pilot project to inventory forest roads and water crossings on 12 management units. In the fall of 2001, a training course was held to outline the Forest Roads and Water Crossing Initiative for each of these 12 units. The training included a description of the methodology and tools to use in the pilot inventory of water crossings and a description of the attributes of each road and water crossing to be collected. The audience for this training included a combination of MNR Districts and Sustainable Forest Licensees.

Since the EA approval, MNR has vigorously pursued geographic information system technology. In 1995/1996, all of MNR's district and area offices were provided with geographic information system hardware, software, and associated training. This technology has since been put into practice in all of MNR's regional, science and main office locations. Annual support is provided to geographic information system workstations with respect to hardware and software. In addition, MNR began development of the Natural Resources Values Information System in 1995, a product based on a geographic information system framework that provides data mapping standards for values that are used in developing FMPs. An increasing number of MNR staff from all program areas are being trained and familiarized with the use of both geographic information system technology and the Natural Resources Values Information System.

(d) Those analytical methods for assessing social and economic advantages and disadvantages of timber management activities which are applicable to Ontario's timber management operations, (as described in Condition 104)

Term and Condition 104 directs MNR to investigate available analytical methods for assessing social and economic advantages and disadvantages, and their applicability to Ontario's forest management operations, and develop or adopt appropriate methodologies for use in forest management planning. MNR included the requirement in the FMP Manual that FMPs contain a socio-economic profile and a socioeconomic analysis from the results of the SocioEconomic Impact Model.

As part of the FMP training modules, training is provided on the development and interpretation of socioeconomic profiles in FMPs. This is complemented by web-based support for MNR staff via an Intranet web site (MNR 2002h).

In addition, the SocioEconomic Impact Model FMP module is delivered annually and provides technical instruction on the use of the model and its application in FMPs. Technical support for socioeconomic impact analysis includes updated users' manuals, computer-based training CD, and the distribution of information through the web site. Technical support was upgraded in 2001.

(e) Monitoring requirements and methodologies

Silvicultural Effectiveness Monitoring

Silvicultural effectiveness is the comparison of how the results of a silvicultural prescription or treatment compare with the targeted results, the results and costs of other prescriptions on similar sites and silvicultural standards. Considerable work has been conducted since 1994 in training on the requirements and methodologies for monitoring silvicultural effectiveness.

In 1995, MNR provided free growing regeneration assessment training throughout Ontario. Training on free growing regeneration assessment was combined with training on silvicultural effectiveness monitoring and the Silvicultural Treatment Assessment and Reporting System and delivered in 1998, 1999 and 2001. A comprehensive training session on silvicultural effectiveness is scheduled for 2002

One of the main mechanisms for monitoring silvicultural effectiveness involves the reporting of stand and forest level assessments and the analysis of success and failures of treatments in the management unit annual reports and reports of past forest operations. Training on these requirements, as detailed in the FMP Manual, occurs through the annual FMP module training and the training on the annual planning and reporting requirements.

Compliance Monitoring

Since the EA approval and enactment of the *Crown Forest Sustainability Act*, a new business relationship between the MNR and the forest industry has shifted more responsibilities for forest management to the forest industry. The Forest Operations Compliance Program has become a shared activity between the forest industry and the MNR. The Sustainable Forest Licensee is responsible for compliance monitoring and the MNR role has become one of auditing and forest industry compliance monitoring. Inspection reports are filed using the Forest Operations Compliance Information System. Training courses regarding the new requirements and methodologies for compliance monitoring, including awareness on the remedies and enforcement for non-compliance provided under the *Crown Forest Sustainability Act*, have been offered to the forest industry and MNR compliance staff. The following list details the formal training provided by MNR's main office staff, of which the forest industry were involved as equal participants:

- 1996/1997: 'Compliance Inspector' training attended by MNR and forest industry compliance inspectors.
- 1997: 'Remedies and Enforcement' training attended by MNR staff.
- 1998: 'Forest Operations Compliance Information System' training attended by MNR and forest industry staff.
- 1998 & 2000: 'Civil Process Prosecution' training attended mainly by MNR district enforcement staff.
- 1999: 'Forest Operations Compliance Inspection System and Compliance Information System Training' attended by MNR compliance staff. Over 20,000 reports have been completed in three years.
- 2001: 'Compliance Inspector Competency Certification' training attended by MNR and forest industry compliance inspectors. Additional training for a large number of compliance inspectors is anticipated over the next two years. Certification is being

delivered by the Forest Operations and Forest Management Competency programs and the training delivered by the Forest Practices Competency Steering Committee.

- 2002: Additional 'Forest Operations Compliance Inspection System' is being conducted. 'Remedies and Enforcement' training is planned.

MNR's districts and regional offices have also conducted training sessions, presentations, field tours and/or meetings, often in collaboration with the forest industry, to meet localized needs.

The formal and informal training on compliance monitoring has resulted in upgraded professional and technical skills; increased consistency in inspection, reporting and enforcement; enhanced compliance and enforcement capabilities; prosecution of violators; and collections of outstanding Crown charges from instances of non-compliance.

Independent Forest Audits

MNR's independent audit program, described in the Independent Forest Audit Process and Protocol, addresses the requirements of T&Cs 85, 86, 87 and Appendix 25 of the EA Approval, along with the requirements related to the *Crown Timber Act*, and the *Crown Forest Sustainability Act* and associated manuals. The protocol was fully implemented starting in 1997. All the audits are conducted by independent consultants contracted by MNR, and include Registered Professional Foresters and biologists.

Information sessions are offered annually, by MNR's regional offices and the MNR's Forest Evaluation and Standards Section, for personnel from MNR's district offices and the Sustainable Forest Licences that will be audited the following summer. The sessions are designed to assist in the implementation of the audit program, and to discuss the full audit process from the awarding of contracts to the preparation of action plans and status reports. A large component of these sessions includes information on how to prepare for and work through an audit.

The Forest Evaluation and Standards Section also holds a mandatory auditor orientation session each spring shortly after the contracts are awarded to the audit firms. Lead auditors from successful firms are expected to attend the 1-2 day sessions. The purposes are to maintain and enhance the quality and consistency in audit conduct and reporting, to provide lead auditors with an opportunity to share information on lessons learned in past audits with other auditors and MNR staff, and to provide an update on recent changes to Ontario's legal and policy framework for forest management.

Provincial Wildlife Population Monitoring

The provincial wildlife population monitoring program is delivered by the Wildlife Assessment Units. These units have worked closely with MNR field staff, the general public and non-government organizations in the implementation of monitoring efforts, primarily through technology transfer and training. For example: the Wildlife Assessment Units made available to MNR's district biologists, and other interested MNR staff, tapes and CDs on the identification of breeding bird calls as training aids. Similarly, audio aids were made available to help identify the breeding songs of herptiles. These audio aids were provided in concert with information to assist in the forest bird monitoring program and backyard amphibian counts, respectively. Information on how to conduct and participate in these surveys, or garner volunteer assistance from the public, was also provided by the units.

In 2001, Wildlife Assessment Units put on a moose aerial inventory training workshop which gave an overview of how moose aerial inventory data is collected and used for moose management. Participants ranged from MNR biologists, technicians and other staff, members of advisory committees, and partners from the Lake Abitibi Model Forest and Pukaskawa National Park.

(f) Results of relevant scientific research

The EA Approval focused MNR forest research in a number of areas, as detailed in specific terms and conditions, and associated appendices. Some of this research had begun before the EA Approval, and MNR is now benefiting from the analysis of the results to date. All of the research programs related to the EA Approval have reached the stage where analysis and reporting are significant activities.

MNR's Applied Research and Development Branch has the lead role in generating new science information and advances through in-house research activities and by closely following relevant research conducted elsewhere. Each MNR research scientist is expected to plan how to best transfer the results of their work within MNR, to other stakeholders and the public to ensure that this transfer is effective. A primary method of reporting on research is the publication of results and conclusions in peer-reviewed scientific journals. However, this is just part of the science transfer process.

MNR staff in the Applied Research and Development Branch and in Science and Information Branch work together to offer a variety of courses based on the funding available and identified priorities. Examples of training that were offered to affected practitioners, and which included results of relevant scientific research, are tree marking, ecological land classification, landscape management and interpretation, introduction to soils, and white pine silviculture.

Specific workshops have also been organized by MNR staff and others to understand and apply MNR research to complex issues in areas such as fire science, climate change, shoreline harvesting, and moose ecology and management.

MNR staff have had key roles in organizing and participating in scientific conferences in Ontario, across Canada and internationally. Recently, MNR science staff led several major conferences in Ontario, focusing on the themes of forest sustainability, natural disturbance, old growth and forest soils.

Part (h) of this progress report provides examples of science and information transfer opportunities for MNR and forest industry field-level workers, provided by MNR's provincial and regional experts, sometimes in collaboration with the forest industry, other government agencies or academia.

(g) Other specific professional and technical training in specific subject areas, as training needs are identified from time to time

In 1996, MNR created the Forest Management Competency Program to ensure that MNR staff and its partner workforces are adequately qualified to manage Ontario's forests using the best available science and technology.

The Forest Management Competency Program is designed to set skills and knowledge standards, develop and deliver learning mechanisms, assess competency, recognize achievements, and maintain individual skills and knowledge. As new science and new learning methods become available, and as forest management practices change, the competency program is adjusted.

The program uses a proactive approach to address changing MNR and forest industry workforce requirements. The needs of the forest workforce are actively assessed by conducting surveys. The program reviews and responds to competency needs identified by MNR and the forest industry, independent forest audits, reports of the Provincial Auditor, and other reports. The creation of continuous learning opportunities are also actively pursued to ensure MNR staff have a solid science foundation.

In 2000, the Forest Management Competency Program conducted workforce profiling surveys for five field-level positions within the MNR that have forest management responsibilities. These positions included area supervisors, area foresters, area clerks, senior area technicians, and area technicians. The results identified priority competency areas for which staff in these positions require refreshing. The Forest Management Competency Program has communicated these needs to the program areas responsible for training delivery. For example, one-day training sessions on forest resource licensing were delivered by the Tenure and Measurement Section of MNR across the province in 2001 in response to identified needs of area foresters.

The Forest Practices Competency Partnership was formed in November 1999, with members from the forest industry and MNR, to develop and implement a co-operative approach to deliver competency-based training to the forest workforce as an investment in quality forest management.

The development and delivery of an instructor course 'Instructor's Manual – Installing Culverts on Forest Access Roads' in 1999 (MNR 1999g) was jointly developed by an MNR and forest industry committee that set the ground work for the partnership.

The following technical training has been developed under the direction of this partnership:

- Instructor's Manual - Erosion and Sediment Control at Water Crossings on Forest Access Roads.
- Instructor's Manual – Site Protection Training for the Boreal Forest (Forest Practices Competency Partnership 2001b).
- Instructor's Manual - Site Protection Training for the Great Lakes – St. Lawrence Forest (Forest Practices Competency Partnership 2001c).

These training packages were designed to provide the maximum benefit to forest operations, planning, and compliance staff in the forest industry and MNR field staff.

In 2001, a 'Forest Operations Compliance Inspector' training course was established by the partnership for forest operations compliance and audit staff in the forest industry and MNR. This will allow for provincial certification of compliance inspectors and field auditors.

MNR's Wood Measurement Program also offers three annual courses for those involved in wood measurement: 1) 'Provincial Scaling Course'; 2) 'Provincial Refresher Course (Grade)'; and, 3) 'Provincial Refresher Course (Tree-length)'. This program and its graduates are responsible for assessing volumes and species of timber harvested and wasteful practices to ensure proper utilization of Crown timber resources.

Tree marker certification training has been developed and is being delivered by MNR's Science and Information Branch, supported by the Forest Management Competency Program. Over 350 tree markers have been certified in the Great Lakes-St. Lawrence silviculture system to date.

The Forest Management Competency Program regularly provides advice on curriculum to colleges and universities. This includes, as examples, active participation on curriculum advisory boards, providing competency information to influence curriculum and program development, and, supporting co-operative education programs.

MNR is actively recruiting graduates from forestry universities via the forester roster initiative. High quality candidates have been hired into the MNR Intern Program, or through other contracts from the roster. The roster of successful candidates is made available for the forest industry as well. This program exposes forestry graduates to MNR (and the forest industry) business, thus providing professional and technical training.

The creation and promotion of a comprehensive Forest Management Competency Program that results in high standards of knowledge and skill, and the continuous improvement of forest management workforce competency, continues to evolve.

(h) Expand training for woodland workers to cover all implementation manuals and aspects of timber management planning that MNR believes would be useful for field operations

Since 1994, the business relationship between the MNR and the forest industry has changed. The forest industry is now responsible for the operational implementation of FMPs, including the marking of harvest boundaries, silvicultural effectiveness monitoring and compliance monitoring. In addition to training provided by MNR on such things as tree marking, scaling, culvert installation and compliance monitoring, the forest industry also provides training to woodlands workers on items such as boundary marking and road location.

Training programs have become important requirements for those forest companies seeking certification through organizations such as the Canadian Standards Association, the International Standards Organization and the Forest Stewardship Council. These organizations generally require education and training programs to be in place to ensure that individuals who are responsible for managing the forest are continually upgrading their knowledge and skills.

The Ontario Professional Foresters Association has a Continuing Forestry Education Program for anyone involved in resource management including all forestry professionals, Registered Professional Foresters, forestry graduates, resource technicians and biologists. The association requires members to participate in continuing education to maintain and increase knowledge and skills.

Many of the training packages developed by the Forest Practices Competency Steering Committee, described under part (e) of this progress report, have expanded training for field level workers to assist in the application of MNR's implementation manuals. These provincially developed instructor courses are designed to provide for delivery by field staff to equipment operators, and operationalize forest management guidelines. They enable instructors to deliver high quality training and re-enforce consistent messages and standards at the operator level.

Tree marker training has been developed and is being delivered by MNR's Science and Information Branch, supported by the Forest Management Competency Program.

MNR's provincial and regional experts provide numerous science and information transfer opportunities for MNR and forest industry field-level workers, sometimes in collaboration with the forest industry, other government agencies or academia. The following are examples:

- Careful logging – train the trainer' course delivered by MNR's Southcentral Science and Technology unit.
- 'Commercial thinning of jack pine and black spruce' delivered by the Northeast Science and Technology unit.
- 'Intensive forest management field workshop' delivered by the Northeast Science and Technology unit.
- 'Building regional competence in site description for forest management' delivered by the Northwest Science and Technology unit.
- 'Managing the northern clay forest of glacial lake Barlow-Ojibway in Ontario and Quebec' facilitated by the Northeast Science and Technology Unit in partnership with the Government of Quebec.
- 'Aerial spray manual roll out' delivered by MNR's Forest Management Branch.
- 'Sustainability - computer-based training' delivered by MNR's Forest Management Branch.
- 'Science for planning: workshops (1998,1999, 2000)' delivered by MNR's Northwest and Northeast Science and Technology units.
- 'Forest Ecosystem Classification and forest soils' delivered by MNR's Northwest and Northeast Science and Technology units.
- 'Ecological Sustainability Leadership Training' delivered by specialists from across all of MNR's program areas and targeted MNR's senior managers.
- 'Yellow Birch Workshop' delivered as a collaborative effort between MNR's Forest Management Branch and Clergue Forest Management Inc.
- 'Genetic Diversity' delivered by Reed Noss and Forest Genetics Ontario.
- 'Year 2000 Forestry Conference' delivered by MNR, the Canadian Forestry Service and other partners.
- 'Forestry and Wildlife' workshops annually developed and delivered by Westwind Forest Stewardship Inc.
- 'Canadian Woodlands Forum' workshops related to forest operations.
- '7th North American Woodland Caribou Conference' (1996) – MNR assisted in the delivery, with attendance from academics, government and industry.
- 'Northeast Science and Technology workshop weeks' (1997, 98) – includes policy and science transfer related to various aspects of forest management, such as landscape ecology, habitat management, modelling, etc.
- 'Intensive forest management in Ontario' (1999), a multidisciplinary workshop facilitated by MNR and attended by government, forest industry and other interested parties.
- 'Professional forest worker training initiative' (1999) delivered by East Central Ontario Training board, the forest industry, MNR and the federal government.

Synopsis

MNR is committed to staff training and development so that those engaged in planning and implementation of forest management activities will have leading edge resource management skills and knowledge necessary to set the benchmark in resource management practices. MNR also works in partnerships with the forest industry and others providing information, training and infrastructure to improve the skills and knowledge of forestry professionals and woodland workers.

Since 1994, professional and technical training has been provided in an array of program areas allowing forest practitioners and field level workers that are responsible for the planning and implementation of forest management operations, to continually improve their knowledge. Forest management planning training continues to be one of the key training programs in MNR. The continued application and evolution of the Forest Management and Competency Program will maintain high standards of knowledge and skill, and provide for the continuous improvement of forest management workforce competency, both within MNR and the forest industry.

MNR is making recommendations regarding this term and condition in Section 3.5.4.8 Professional and Technical Training Programs, of the Timber Class EA Review.

District Land Use Guidelines - T&C 110

Current Requirement

At the time of the EA hearings, MNR had in place District Land Use Guidelines that provided direction on permitted uses on Crown land. Those guidelines had been developed, with considerable public involvement, in the early 1980s. The EA Board required MNR to revise these District Land Use Guidelines and report on their status.

T&C 110

Revisions to the District Land Use Guidelines designating permitted land uses throughout the Area of the Undertaking shall be made in consultation with the committees listed under Appendix 1. MNR shall report on the status of the District Land Use Guidelines undertaking in the Annual Report on Timber Management to the Legislature pursuant to Condition 82, and in the report to the Minister of the Environment and Energy pursuant to Condition 114(a)(v).

Progress Report

Since the development of the District Land Use Guidelines in the early 1980s, MNR has been implementing the direction contained therein and amending that direction as required, with public input. During the early 1990s, MNR initiated a review of its land use planning system.

In 1995, the Ontario government released recommendations for an improved MNR land use planning system. The recommendations were modified and became the first step in proposing changes to the land use planning process from the former District Land Use Guidelines amendment process.

In February 1997, the Lands for Life land use planning process was initiated. New committees, made up of citizens with a diverse range of interests, known as Round Tables, were established for each of three ecologically based planning regions within the Area of the Undertaking, namely the Great Lakes-St. Lawrence, Boreal East and Boreal West. The Round Tables were responsible for making recommendations to MNR on Crown land use designations that offered protection for natural heritage areas, promoted resource-based tourism, strengthened the forest industry and provided a better future for jobs and communities. This land use planning process involved a substantial public dialogue, including 190 public meetings across the province. A consolidated Round Table report led to the Proposed Ontario's Living Legacy Land Use Strategy in March 1999.

In July 1999, following extensive public consultation, Ontario's Living Legacy Land Use Strategy was announced. It recommended the largest expansion of Ontario's system of parks and protected areas in the province's history. The resulting addition of 378 new parks and protected areas, totalling 2.4 million hectares, means the internationally recognized target for parks and protected areas of 12% has been achieved within the Area of the Undertaking. The strategy also recommended a new land use category called Enhanced Management Areas, which covered about 3.6% of the Area of the Undertaking. These areas, which are not a park or protected area, are intended to maintain a range of values. Specific resource management uses may be subject to conditions that are designed to support the values that make the area special, in a manner that generally has no impact on wood supply.

There are seven categories of Enhanced Management Areas: natural heritage; remote access; Great Lakes coastal area; fish and wildlife; recreation; resource-based tourism; and intensive forestry.

A total of 1.6 million hectares of the intervening land between the parks and protected areas are contained within five categories of Enhanced Management Areas: natural heritage; remote access; Great Lakes coastal area; fish and wildlife; and recreation. Detailed implementation strategies for Enhanced Management Areas will be developed with the participation of stakeholders. No areas of resource-based tourism and intensive forestry were designated in the land use strategy under these categories, but may be in the future.

Associated with the land use strategy was an agreement signed in 1999 between Ontario's forest industry, a coalition of environmental groups known collectively as the Partnership for Public Lands and the MNR. This agreement is known as the Ontario Forest Accord. The Accord reflects agreement on recommended protected areas, the wood supply needs of the forest industry and also provides a means to protect additional areas in the future.

The involvement of the committees identified in the EA Approval in land use planning policy changes varied. The Provincial Forest Policy Committee was provided with information during the Lands for Life land use planning process. The Provincial Forest Technical Committee was provided with updates where relevant. Regional Advisory Committees were not established until after the Lands for Life land use planning process concluded. However, the Round Tables provided the similar function as Regional Advisory Committees and several former members of the Round Tables became Regional Advisory Committees members. Local Citizens Committees also had a variable degree of involvement in land use planning processes, including amendments to District Land Use Guidelines.

Ontario's Living Legacy Land Use Strategy replaces local land use designations contained in District Land Use Guidelines where they address the same topics or areas. MNR is currently producing a Land Use Atlas, which is a provincial level amalgamation of District Land Use Guidelines and the land use changes resulting from the land use strategy. This compendium will effectively replace the District Land Use Guidelines. The Land Use Atlas will be readily accessible to the public through the Internet.

The Provincial Annual Reports on Forest Management to the Legislature for 1995/1996, 1996/1997 and 1997/1998 reported on the status of revisions to the District Land Use Guidelines in Chapter 10 – Ongoing Developments and Future Direction. Each report briefly outlined how recommendations for an improved planning system had been released to the public for review in 1995 and that MNR was preparing to implement the new planning system with changes arising from public consultation.

To quote from Page 69 of the 1997/1998 Provincial Annual Report on Forest Management:

> "Recommendations for an improved planning system were released for public review in March 1995. The recommendations were modified based on input from the public, in addition to new direction from MNR's Business Plan.

> In February 1997, the Minister of Natural Resources announced Lands for Life, a comprehensive land use planning process that integrates the protection and use of Ontario's natural resources. Round tables made up of citizens with a diverse range of interests were established for three ecologically-based planning regions (Great Lakes-St. Lawrence, Boreal East, and Boreal West). Public consultation by the Regional Round Tables commenced in June 1997 and continued through to July 1998, at which time the recommendations were submitted to the Minister of Natural Resources" (MNR 1998h, Page 69).

Chapter 1 of the 1998/1999 Provincial Annual Report on Forest Management, highlighted Ontario's Living Legacy and provides a summary of the progress and accomplishments of this long-term, natural heritage strategy. In Chapter 10, a summary of the District Land Use Guidelines planning process was again presented.

Chapter 2 of the 1999/2000 Provincial Annual Report on Forest Management, provides information on Ontario's Living Legacy, new parks and protected areas, and the Ontario Forest Accord. In Chapter 10, a summary of the District Land Use Guidelines planning process was again presented, including the changes in how the District Land Use Guidelines are affected by Ontario's Living Legacy Land Use Strategy. To quote from pages 94 and 95:

> "The Ontario's Living Legacy Land Use Strategy replaces the Northwest and Northeast Strategic Land Use Plans, and the Southern Ontario Coordinated Program Strategy, for the AOU. Wherever the new Land Use Strategy and the 1983 District Land Use Guidelines address the same topics, the Ontario's Living Legacy Land Use Strategy provides the current direction. The District Land Use Guidelines will continue to provide some detailed land use and resource management direction, particularly for the General Use Areas land use designation, because the new strategy does not provide any specific direction for this designation. Local land use direction in the District Land Use Guidelines and other documents will be brought into conformity with the strategy through subsequent planning".

Synopsis

The most significant change that has affected District Land Use Guidelines since the EA Approval has been the Lands for Life land use planning process, which included extensive public consultation. The resulting addition of 378 new parks and protected areas, totalling 2.4 million hectares, means the internationally recognized target for parks and protected areas of 12% has been achieved within the Area of the Undertaking. A new land use category has been established for some of the intervening areas, called Enhanced Management Areas. Detailed implementation strategies for these areas will be developed with the participation of stakeholders.

The permitted land uses for those areas outside of existing and proposed parks and protected areas have changed little from what was shown in the District Land Use Guidelines. However, where amendments to District Land Use Guidelines have occurred, MNR has sought input from the public.

Since the EA Approval, MNR's land use planning process has changed significantly. Public consultation continues to be a key component of any Crown land use planning process. The Land Use Atlas will help to facilitate future dialogue on land use changes. The Land Use Atlas will also make information about proposed and approved changes to land use policies readily accessible to the public.

MNR is making recommendations regarding this term and condition in Section 3.5.4.9 District Land Use Guidelines, of the Timber Class EA Review.

Amendments to the EA Approval - T&C 114(a)(i)

Current Requirement

The EA Board required MNR to undertake a comprehensive review of the undertaking during the eighth year, and to make recommendations to the Minister of Environment and Energy, regarding an extension and amendments to this approval. Term and condition 114(a)(i) was to provide a complete record of all amendments in accordance with the provisions of T&C 112 and the associated Appendix 24 as supporting information to assist the comprehensive review.

T&C 114(a)(I)

(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding the extension and amendment of this approval on the basis of supporting information which shall consist of:

(i) a complete record of all amendments to the approval pursuant to Condition 112 for the undertaking during the term of this approval;

Progress Report and Synopsis

No amendments to the EA Approval were made during the first eight years and two months of the nine-year term. With MNR's effort in the eighth year directed to the production of the submission for the extension and amendments of the EA Approval beyond the nine-year term, it is expected that no amendments to the EA Approval will be produced during the remaining ten months of the term.

For further analysis and discussion of this Term and Condition, see Section 3.7.2.

Amendments to Forest Management Plans - T&C 114(a)(ii) and 67 and Appendix 13

Current Requirement

Term and condition 114(a)(ii) requires MNR to review a complete record of all amendments to timber management plans.

Term and condition 67 and Appendix 13 and parts of T&Cs 1, 3, 60 and 61 prescribe the requirements for the preparation, review and approval of amendments to an FMP, when changes are required during the term of the approved FMP.

> ***T&C 114(a)(ii)***
>
> *(b) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding the extension and amendment of this approval on the basis of supporting information which shall consist of:*
>
> *(ii) a complete record of all amendments to Timber Management Plans detailing their categorization as administrative, minor or major as set out in Condition 67 and Appendix 13*

> ***T&C 67***
>
> *Amendments to an approved Timber Management Plan may be required during the five-year term. The planning process for any such amendments may be initiated by any person, by making a written request for an amendment to the district manager. Any such request shall be accompanied by sufficient information to allow the district manager to determine whether the proposed amendment should proceed, and whether the amendment should be treated as administrative, minor and major. The particulars of this condition are set out in Appendix 13.*

Progress Report

During the implementation of an FMP, there are a number of circumstances that can result in a need to amend the approved FMP to keep it current. Amendments range from simple corrections to the text of an approved FMP, to substantial alterations that require more comprehensive planning, including opportunities for public consultation. The requirements for making amendments are detailed in Part A, Section 5.2, of the FMP Manual.

Amendments are processed under three categories: administrative, minor and major. The MNR District Manager is responsible for determining if an amendment request should proceed, and for the categorization of the amendment. With the regulation of the FMP Manual in 1996, Local Citizens Committees became involved in the categorization of amendments and the assessment of the appropriate extent of public consultation.

Categorization of amendments and associated planning requirements are based on the particular nature of the proposed changes. The need for public consultation is a key factor in determining the appropriate category for an amendment. While the technical planning requirements are similar to those that would be required if the operations were proposed in the preparation of a new FMP, the MNR review and approval requirements, and opportunities for public consultation differ depending upon the category of amendment.

Administrative amendments are reviewed and approved at the MNR District level and generally involve minimal changes to an FMP. Formal public consultation is not required. Examples of administrative amendments include small modifications to harvest areas and access, additional values information and associated area of concern prescriptions, and modifications to FMP text and/or tables.

Minor amendments generally involve more substantive changes to an FMP, and thus require one formal public consultation opportunity. They are also reviewed and approved at the MNR district level. As an example, amendments to include salvage operations are often categorized as minor as they may involve changes to harvest areas, renewal and tending areas and changes to FMP tables and text.

Major amendments are those that involve the greatest degree of change to an approved FMP. They require two stages of public consultation, specifically an information centre and a notice of amendment inspection after the amendment is approved. Opportunities for First Nations to exercise the Native consultation option are provided. Major amendments are reviewed by the MNR district and regional staff, certified and recommended for approval by the MNR District Manager and approved by the MNR Regional Director. An example of a major amendment would be the addition of substantial new harvest areas, which include a new road corridor.

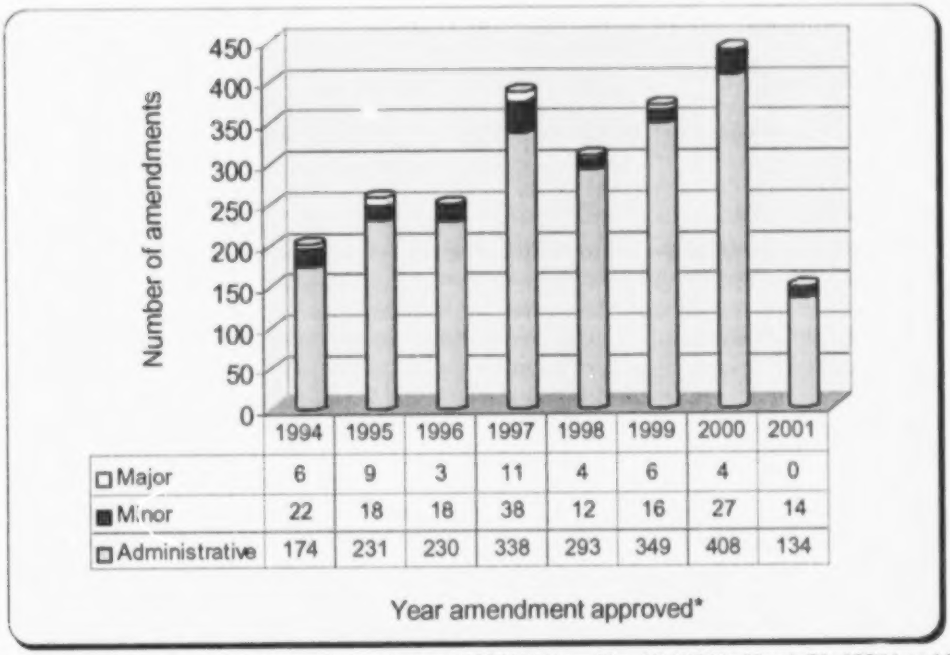
All amendments form part of an approved FMP, and as such are filed in the same publicly accessible locations as the FMP.

Review Results

MNR has conducted a review of all amendments approved for FMPs and contingency plans from May 19, 1994 to August 1, 2001, as part of preparing this Timber Class EA Review. Detailed information used to complete this review is retained with MNR's Forest Management Branch.

A total of 2365 amendments to FMPs and contingency plans were approved during the period of May 19, 1994 to August 1, 2001 (Figure 9). The total number of amendments per year ranged from 202 to 439. Of the total amendments, 91% (2157) were administrative, 7% (165) were minor, and 2% (42) were major. The total number of administrative amendments per year appears to be increasing, although there is no clear trend for major or minor amendments.

Figure 9. **Total number of amendments by category and year (May 19, 1994 to August 1, 2001).**



	1994	1995	1996	1997	1998	1999	2000	2001
☐ Major	6	9	3	11	4	6	4	0
■ Minor	22	18	18	38	12	16	27	14
☐ Administrative	174	231	230	338	293	349	408	134

*This figure includes a partial year of data for both 1994/95 (from May 19,1994 to March 31, 1995) and 2001/02 (April 1, 2001 to August 1, 2001).

Figure 10 and Table 8 provide information on the principle purpose and categorization of amendments. Results show that the number of amendments related to harvest, access, and values and area of concern prescriptions are relatively equal and account for 76% of all amendments (27%, 25% and 24%, respectively). The number of amendments related to renewal and tending, salvage harvest, FMP text/tables, silvicultural ground rules and other, account for the remaining 24% of the amendments are also relatively equal.

Figure 10. Total number of amendments by principle purpose for the amendment (May 19, 1994 to August 1, 2001).

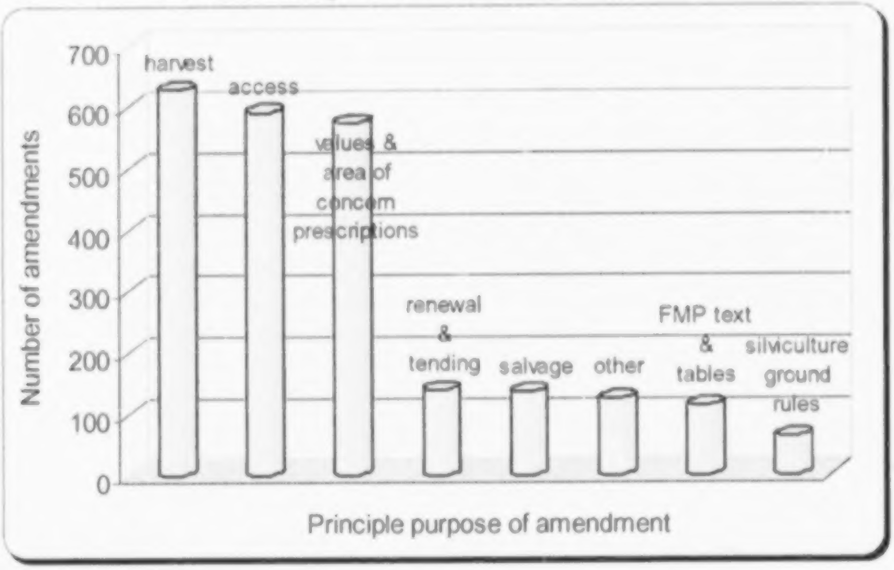


Table 8. Amendments by their categorization and principle purpose (May 19, 1994 to August 1, 2001).

Principle purpose of amendment	Category of amendments (%)			
	Administrative	Minor	Major*	Percent of total amendments**
Harvest	25	38	45	27
Access	24	29	48	25
Values and area of concern prescriptions	26	4	0	24
Renewal and Tending	6	6	0	6
Salvage	5	20	0	6
Other	6	1	2	5
FMP text and tables	5	2	2	5
Silvicultural ground rules	3	0	2	3
Percent of total amendments	91	7	2	100

*Column adds to 99% due to rounding.
**Column adds to 101% due to rounding.

Local Citizens Committees help to categorize proposed amendments. Generally, amendment proposals are presented to them at regular meetings for discussion and recommendation. The need to reduce operational delays and the time spent on the categorization of amendments by Local Citizens Committees was highlighted as an issue at the Forest Management Planning Improvement Project workshops. Some committees have requested that they be consulted prior to amendment approval only if the amendment is deemed by the MNR to be minor or major.

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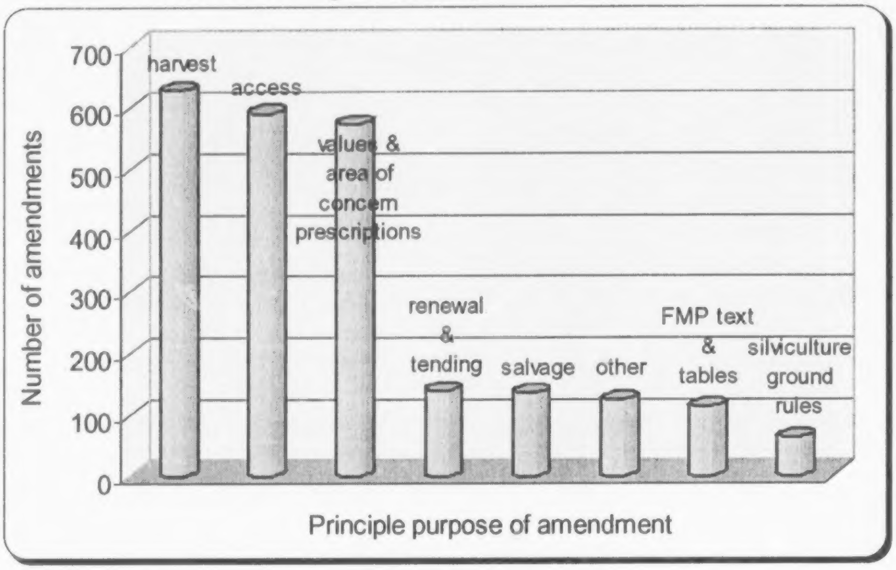

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These Local Citizens Committees adopted this approach to hasten the approval process and to ensure that their volunteer time is used effectively.

The input received during the Forest Management Planning Improvement Project indicated that there was a need to streamline requirements associated with making changes to the time of operations to accommodate the actual situations encountered in the field. Currently, operations are often delayed while processing amendments to change water crossing locations. MNR is recommending additional requirements for water crossings in Annual Work Schedules to address this concern. See Section 3.1.7 Access Planning of this Timber Class EA Review for more information.

Synopsis

During the implementation of an FMP, there are a number of circumstances that can result in a need to amend the approved FMP. Amendment provisions have been widely used to keep FMPs current and address unforseen circumstances. The majority of the amendments that were approved in FMPs since the EA Approval were categorized as administrative. Amendments related to harvest, access, values and area of concern prescriptions accounted for approximately three-quarters of all approved amendments.

Categorization of amendments using Local Citizens Committees has been successful. Some committees have adopted approaches to hasten the approval process for administrative amendments to use their time more effectively.

MNR is making recommendations regarding this term and condition in Section 3.1.9 Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs, of the Timber Class EA Review.

Bump-Up Requests - T&C 114(a)(iii), 70 and 71

Current Requirement

Term and condition 70 and 71, and the associated Appendix 15 of the current EA Approval prescribe the requirements of the bump-up procedure which enables interested parties to request that the Minister of Environment and Energy order an individual environmental assessment of specific forest management activities.

Term and condition 70 and Appendix 15 prescribe the steps in the bump-up procedure which apply at any time during the planning of forest management operations, and also after an MNR approval decision prior to the FMP becoming final. Term and condition 71 expands on the requirements of Appendix 15, by providing for no decision by the Minister of Environment and Energy until at least 30 days following an MNR FMP approval decision. As well, T&C 71 excludes operations from areas which are the subject of a bump-up request until after a resolution of the bump-up request.

Term and condition 114(a)(iii) requires MNR to review a complete record of all bump-up requests, and a summary of their standing, during the term of the approval. MNR has reviewed the complete record of all bump-up requests that have been requested since May 19, 1994 as part of its eighth-year review. This record includes bump-up requests that were made on FMPs, contingency plans and major amendments.

T&C 114(a)(iii)

(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding the extension and amendment of this approval on the basis of supporting information which shall consist of:

(iii) a complete record of all bump-up requests, and their disposition, during the term of this approval;

T&C 70

A "bump-up" request is a request from any person to the Minister of Environment and Energy for the designation of specific proposed timber management activities to the status of an individual environmental assessment under The Environmental Assessment Act, R.S.O. 1990, c.E.18. A request may be made during the preparation of each Timber Management Plan; each major amendment to an approved Timber Management Plan; and each program for insect pest management. The process governing the bump-up requests is set out in Appendix 15.

T&C 71

The Ministry of Environment and Energy shall not determine a bump-up request sooner than 30 days following MNR approval of the Plan and Notice of Plan inspection. Subject to the provisions of Appendix 15, the lands subject of an outstanding issue or a bump-up request shall be excluded from operations objected to until resolution of the bump-up request.

Progress Report

The bump-up procedure is detailed in Part A, Section 3.5, of the FMP Manual. The procedure applies during the preparation of an FMP, a major amendment or an insect pest management program. A bump-up request can be made at any time during the FMP planning process, but no later than 30 days after the final public notice for an MNR approved FMP or major amendment.

To assist in the Minister of Environment and Energy's consideration of the request before making a decision, MNR is provided an opportunity to respond. The Minister of Environment and Energy normally makes a decision within 45 days of the last opportunity to make a bump-up request.

The EA Board concluded that the issue resolution and bump-up procedures are interrelated, suggesting that "...the issue resolution process has greater potential for finding practical, faster solutions to problems than does the bump-up provision, and that recourse to bump-up can derail issue resolution if the two are parallel processes" (Koven and Martel 1994, Page 105). It was anticipated that in most circumstances the decision of the Minister of Environment and Energy on a bump-up request would follow completion of issue resolution.

Review Results

MNR has examined bump-up requests, and their disposition, that were made between May 19, 1994 to September 1, 2001, that are on file with MNR's Forest Management Branch.

For the purposes of analysis, multiple identical bump-up requests (e.g., form letters) have been counted as one request. There were three bump-up requests made after May 19, 1994 on FMPs that were approved before May 19, 1994. These requests have not been included in the analysis.

The following is a summary of the number of bump-up requests:

- A total of 95 bump-up requests were made to the Minister of the Environment from May 19, 1994 to September 1, 2001.
- Eighty bump-up requests were made on FMPs.
- Nine bump-up requests were on major amendments.
- Six bump-up request were on contingency plans.
- Of the 101 FMPs approved, 45 had bump-up requests.
- The number of requests by FMP varied from one to six.

It is not a requirement to include an opportunity for bump-up requests during the preparation of a contingency plan. However, for the 1999-2001 Elk Lake Contingency Plan and 1997-1999 Temagami Contingency Plan, MNR voluntarily provided a bump-up opportunity.

Fifteen of the 95 requests did not require a decision by the Minister of the Environment for one of two reasons:

1. The request was withdrawn by the requestor, often because the planning team was able to resolve the issue, or
2. The request was received after the last opportunity for a bump-up request; that is, after the plan inspection period had expired, or during FMP implementation.

Of the 80 requests requiring a decision from the Minister of the Environment, all were denied. Eleven bump-ups were denied with conditions.

The conditions attached to denials for an individual environmental assessment by the Minister of the Environment generally fell into three categories: sustainability, public consultation and Aboriginal concerns. Sustainability conditions focused on measures needed to address biodiversity, old growth and clear cut harvesting. Public consultation conditions focused on measures to address concerns regarding issue resolution and Local Citizens Committee involvement. Conditions associated with Aboriginal concerns focused on measures to ensure the participation of First Nations in the forest management planning process and to protect Native values.

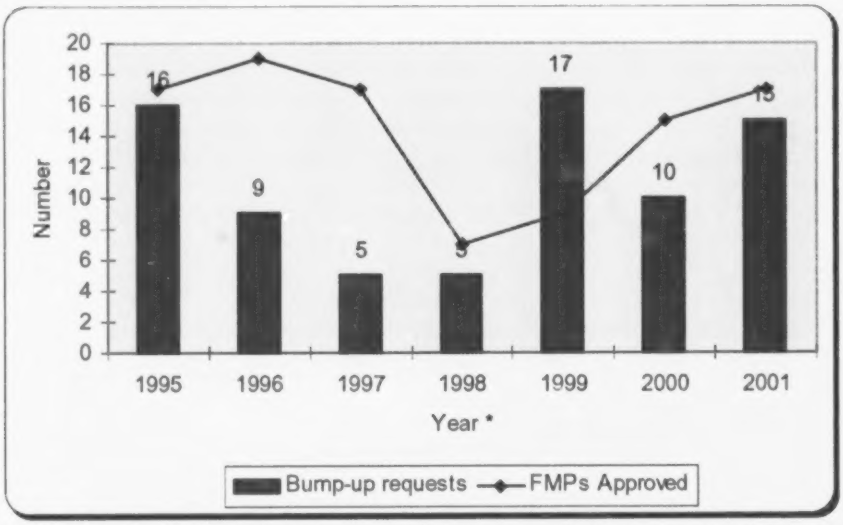
Some conditions dealt with matters beyond the local management unit. For example, the conditions placed on the bump-up denial associated with the 1999-2019 Temagami FMP resulted in direction from the Minister of the Environment for MNR to finalize the Forest Management Guide for Natural Disturbance Pattern Emulation.

In 43% of bump-up requests, the issue resolution procedure preceded the request. In all other cases:

- the requests involved new issues to the planning teams and were received too late in the planning process (i.e., after the final inspection period for the approved FMP), or
- the FMP was already being implemented at the time of the bump-up request.

Figure 11 compares the number of bump-up requests that were received in each year on FMPs to the number of FMPs that were approved in the same year. Generally, the more plans approved in a given year, the more bump-up requests received. It is important to note that there may be multiple bump-up requests for one FMP. For instance, the 1999-2019 FMP for the Whiskey Jack Forest received six bump-up requests.

Figure 11. **Number of bump-up requests vs. number of approved FMPs (from 1995 to 2001.**

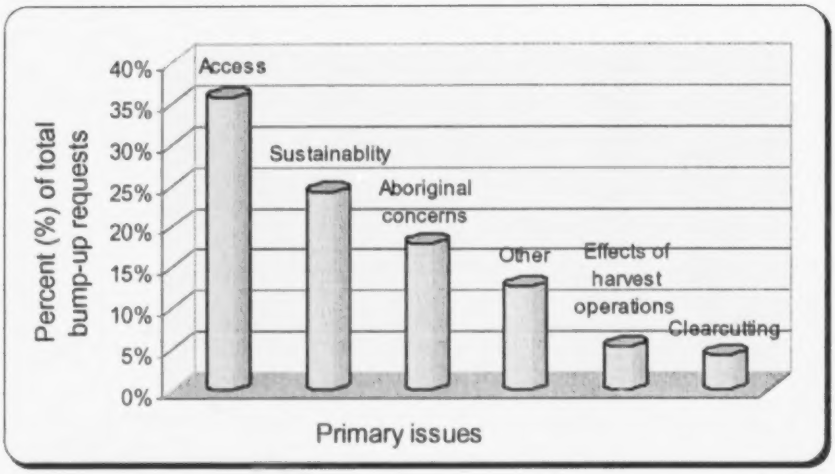


* This graph does not include any bump-ups that were requested on major amendments and contingency plans.

Most bump-up requests included several issues for consideration by the Minister of the Environment. For the purposes of this analysis, MNR distinguished between the 'primary issue' underlying the bump-up request, and 'secondary issues' associated with the request. Primary issues are summarized in Figure 12.

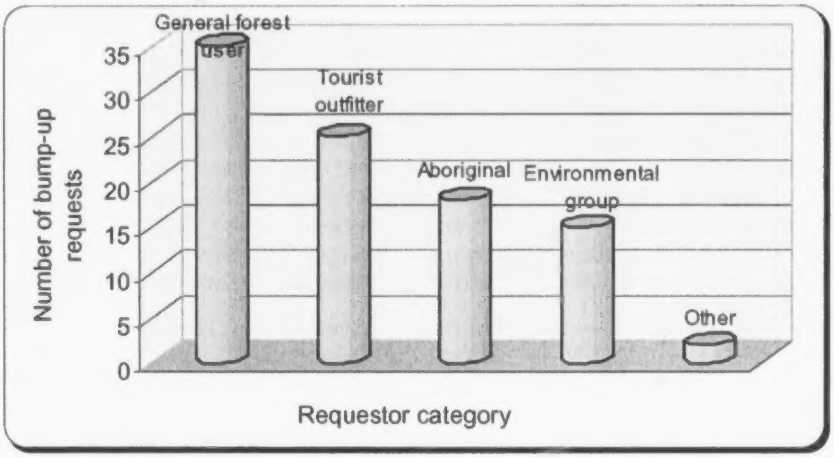
Results from this analysis show that access was the primary issue for 36% of the bump-up requests. Access issues included objections to new roads, the environmental effects that access might have on a particular value, or concerns about restrictions on the use of forest access roads. Sustainability issues accounted for 24% of the bump-up requests. The most common concerns in relation to sustainability were white pine conservation and the provision of wildlife habitat. Aboriginal concerns accounted for 18% of the bump-up requests. Common examples of Aboriginal concerns include: treaty and Aboriginal rights; the protection or identification of Native values; and opportunities for Aboriginal economic development (T&C 77). Twelve percent of the requests were categorized as 'other'. Examples of these include: application of the issue resolution procedure or the public consultation requirements; recreational conflicts; operations near a provincial park; or adequacy of an environmental effects analysis in an FMP. The balance of the requests pertained to effects of harvest operations and clearcutting.

Figure 12. **Bump-up requests on FMPs, major amendments and contingency plans by primary issue category (May 19, 1994 to August 1, 2001).**



Requestors of bump-ups were grouped into five broad categories; general forest user, tourist outfitter, Aboriginal, environmental group, and other (Figure 13). General forest users, such as cottagers, private-land owners, anglers, hunters and trappers, requested 35 bump-ups. Access was the primary issue for 41% of their bump-up requests. Other primary issues for general forest users included sustainability, clearcutting, and other reasons, such as the issue resolution procedure. The general forest users had very wide-ranging secondary issues.

Figure 13. **Number of bump-up requests by requestor category (May 19, 1994 to August 1, 2001).**



Tourist outfitters, Aboriginals and environmental groups accounted for 25, 18 and 15 bump-up requests, respectively. For tourist outfitters, 68% of the primary issues were related to access. Their secondary issues were often related to the effects of harvest operations (e.g. noise and visual aesthetics), or the impacts that new access might have on fish and wildlife populations.

Primary issues raised by Aboriginals requestors included treaty and Aboriginal rights, the protection or identification of Native values and opportunities for Aboriginal economic development (T&C 77). The secondary issues from the Aboriginal requestors were wide ranging, including concerns regarding sustainability, access and public consultation.

The largest primary issue for the environmental groups was sustainability, accounting for 60% of their requests. Clearcutting was the largest secondary issue for the environmental groups.

Synopsis

MNR has completed a review of the bump-up requests, and their disposition, made during the term of the EA Approval. The 95 documented bump-up requests offer a view of public response to specific environmental, social and economic issues related to forest management during this period. Bump-up requests provide an indication of the resource use conflicts commonly associated with different requestors and reflect public awareness of this procedure.

The Minister of the Environment considered the 80 bump-up requests that required a decision and determined that none of these requests warranted an individual environmental assessment. In many of these cases, it was determined that an individual environmental assessment was unlikely to bring to light any adverse environmental effects previously unanticipated by the planning team during the development of the FMP. In denying some bump-up requests, the Minister of the Environment applied conditions for MNR to follow.

The issue resolution procedure was not always used to try to resolve issues before a bump-up was requested on an FMP. This resulted in parallel processes and the derailing of the issue resolution procedure – the very situation the EA Board wished to avoid.

MNR is making recommendations regarding the bump-up procedure in Section 3.1.4 Issue Resolution and Bump-up, of the Timber Class EA Review.

State of the Forest Report - T&C 114(a)(iv) and 84

Current Requirement

The EA Board's decision identified the State of the Forest Report as an important communication link with the public. Term and condition 84 established a requirement for a State of the Forest Report, and Appendix 22 sets out the content requirements of the report.

Subsequent to the EA Board's decision, the *Crown Forest Sustainability Act* was developed and became law April 1, 1995. Section 22 of the Act requires MNR to prepare a report on the state of the Crown forest at least once every five years and to table it in the Legislature.

> ***T&C 114(a)(iv)***
>
> *(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:*
>
> *(iv) The most recent five-year "State of the Forest" report, which is described in Condition 84 and Appendix 22*

> ***T&C 84***
>
> *Every five years, MNR shall produce a provincial "State of the Forest Report" which shall be tabled in the Legislature. The contents of this report are listed in Appendix 22.*

Progress Report and Synopsis

The State of the Forest Report, 2001, was tabled in the Legislature on March 12, 2002. It covers the five-year period of 1995-2000. Data from earlier years were used where necessary to show longer-term trends, and 2001 data were used where appropriate. The State of the Forest Report, 2001, is provided with this submission as required by T&C 114(a)(iv). The contents of the State of the Forest Report, 2001, which are specifically required by T&C 84 and Appendix 22, are contained in Chapter 4 of the report, entitled EA Decision, Appendix 22 Requirements.

Chapter 3 of the State of the Forest Report, 2001, also provides information on the state of Ontario's forests. This chapter addresses the requirements of the *Crown Forest Sustainability Act* by reporting on the sustainability of Ontario's Crown forests using a nationally and internationally recognized criteria and indicators approach. This reporting compliments and exceeds the requirements of T&C 84 and Appendix 22 by providing a more comprehensive report on Ontario's forests, including private land forests and forests outside of the Area of the Undertaking. Chapter 3 also meets the policy direction and guiding principles established in the document Forest Resource Assessment on Crown Lands in Ontario.

The State of the Forest Report, 2001, also contains as Appendix 1 the Forest Resources of Ontario 2001, and as Appendix 2 the Report on Wood Supply in Ontario as required by Appendix 22 of the EA Board's decision

Section 3.3.2 provides an analysis of the implementation of this term and condition.

Copies of the State of the Forest Report, 2001, are provided under separate cover, as referenced in Section 6.0, and can also be accessed on-line at http://www.mnr.gov.on.ca/mnr/forests/forestdoc/sofr/index.html.

Overview of Success and Failure of Public Consultation - T&C 114(a)(vii)

Current Requirement

The EA Approval requires public consultation during the preparation of FMPs. Term and condition 114(a)(vii) requires MNR to provide an overview of the success and failure of public consultation in the Timber Class EA Review as reported by: Local Citizens Committees and contained in the supplementary documentation of FMPs; any similar statement resulting from the Native consultation process; and the issue resolution process.

> ***T&C 114(a)(vii)***
>
> *(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding the extension and amendment of this approval on the basis of supporting information which shall consist of:*
>
> *(vii) An overview of the success and failure of public consultation reported by*
> - *Local Citizens Committees and contained in supplementary documentation of Timber Management Plans,*
> - *any similar statement resulting from the native consultation process, and*
> - *the issue resolution process;*

Progress Report

Several sources of information were used to support this overview, the first being documentation found in 70 FMPs approved between 1997 and 2001 (e.g., Local Citizens Committee Reports and summaries of public consultation). Comments regarding the success or failure of various elements of the public consultation process, collected through surveys, workshops and meetings held during the preparation of Ontario's State of the Forest Report and the Forest Management Planning Improvement Project, were also used.

This progress report provides an overview of the success and failure of public consultation under four subheadings: Local Citizens Committees; Public Consultation Process; Native Consultation Process; and Issue Resolution Procedure.

Local Citizens Committees

The FMP Manual requires that a Local Citizens Committee be established to assist the plan author, planning team, and MNR's District Manager in the preparation of the FMP. The purpose of the Local Citizens Committees are to: ensure local interests are communicated; increase the effectiveness of the five-stage public consultation process by participating in its implementation; and provide input and advice during plan preparation and implementation. Approved FMPs contain reports from the Local Citizens Committees on their activities and include discussions of the problems and issues addressed by the committee, the effectiveness of the committee and recommendations for change. Each FMP also contains a brief statement from the committee which provides their comments and concerns with the FMP.

Most FMPs approved from 1997 to 2001 had a Local Citizens Committee representative on the planning team. These committees were generally supportive of their FMPs. Two Local Citizens Committee's did not specifically state their agreement or disagreement with the plan, but did speak favourably of the planning process and attempts to resolve issues.

The Local Citizens Committees report being involved in gathering background information, setting objectives and strategies, and selecting preferred management alternatives. Some members noted that they did not have a sufficient understanding of the analysis of management alternatives to effectively participate.

Some of the Local Citizens Committee reports contained specific information about members attendance at information centres. Local Citizens Committees reported that they were involved at information centres, and some committees took on additional responsibilities and facilitated the information sessions.

The Local Citizens Committee reports contain comments and suggestions for improving the public consultation process. The committees note a lack of public attendance at information centres and language and information that is much too technical, overwhelming and not relevant to most people attending information centres. The associated suggestions are to: avoid use of jargon and acronyms in notices, summary reports, and information posted at information centres; put more effort into contacting individual stakeholders; and show only harvest and silviculture maps at the information centres. One committee recommended replacing information centres with more advertising and an open invitation for the public to view FMP information by appointment. Many Local Citizens Committees recommended ways to increase attendance. They found that field trips in conjunction with the information centres were valuable and left the public with a better understanding of forest management. One report suggested that Local Citizens Committees could place notices in newspapers, as opposed to the MNR inviting public participation, while another suggested that committee members could personally encourage their association members to attend information centres.

The committees played a significant role in making recommendations to the MNR District Manager at various stages of plan preparation and implementation. This role includes providing advice on the categorization of FMP amendments. The need to reduce operational delays and the time spent on the categorization of amendments by Local Citizens Committees was also highlighted as an issue at the Forest Management Planning Improvement Project workshops. Some committees have requested that they be consulted prior to amendment approval only if the amendment is deemed by the MNR to be minor or major. These Local Citizens Committees adopted this approach to hasten the approval process and to ensure that their volunteer time is used effectively.

Local Citizens Committees also have the task of providing advice to the MNR District Manager during the issue resolution process. Issue resolution summaries contained in the supplementary documentation of FMPs indicate Local Citizens Committees attended meetings and provided specific advice to the MNR District Manager and Regional Director on the resolution of issues.

In a survey of Local Citizens Committee members, conducted to produce the State of the Forest Report, approximately two-thirds agreed that their Committee was effective at influencing local forest management decision-making. The survey results are consistent with Local Citizens Committee reports reviewed from FMPs. More information on public participation and the results of the Local Citizens Committee surveys can be found in Chapter 3, Element 6.3 of the State of the Forest Report.

Local Citizens Committee members and others who attended Forest Management Planning Improvement Project workshops were asked specific questions about the effectiveness of the Local Citizens Committees. Participants suggested that: the roles of the Local Citizens Committee need to be more clearly defined; members need more training and additional information about the planning process and forest management; there is a need to ensure the committees represent a balance of public interest; and members be kept informed, along with the people they represent. It was suggested that the Local Citizens Committees need to be more prominent during public consultation and there is a need for recognition of the considerable amount to time required for members to be informed and participate efficiently in the planning process.

Public Consultation Process

Opportunities for public participation in the development of an FMP are provided through a formal consultation process comprised of five stages, at which specific requirements for notification, consultation and documentation must be met. This process meets the consultation requirements detailed in the EA Approval. The first stage involves a notice inviting public participation in the preparation of the FMP; the second and third stages are information centres at which background information and evaluation of alternatives are presented and public comments are solicited; the fourth and fifth stages are opportunities for the public to review and comment on the draft and then the final FMP, respectively. The supplementary documentation of the approved FMP includes a summary of the public consultation during the development of the FMP.

Some of the summaries of public consultation in FMPs include information on attendance at information centres. From these summaries, attendance at first information centres ranged from approximately 20 to 110 people, while attendance at the second information centres ranged from 10 to 130 people. Attendees at the information centres represented a variety of interested individuals, organizations, businesses and groups, including forest industry, mining industry, trappers, First Nations, municipal governments, recreationalists, baitfish licensees, bear management agreement holders, energy producers, conservation authorities, cottagers, private landowners, researchers, Local Citizens Committee members, members of local roads boards, provincial governments, forestry associations, environmental associations, media, anglers and hunters, tourist outfitters and/or associations, national parks, local businesses, and snowmobile clubs.

There were public comments received at each of the five stages of formal public consultation. Most comments were received at or following the first or second information centres and during draft FMP review.

Results from surveys conducted to prepare the State of the Forest Report indicate that the forest management planning process is fair, effective, and efficient. The same is true of the outcomes, except they are not achieved efficiently. Results showed that most Ontarians surveyed were satisfied with the public consultation opportunities available in the forest management planning process. The people closest to the process, or through direct participation in Local Citizens Committees for example, are more knowledgeable and have higher average satisfaction with the planning process and the outcomes. The results of this survey indicate that the current public participation process employed in forest management decision-making in Ontario is providing effective opportunities for public participation. More information on public participation and the results of the surveys administered to northern and southern Ontario residents can be found in Chapter 3, Element 6.3 of the State of the Forest Report.

Assessing the effectiveness of the public consultation process was an important part of the Forest Management Planning Improvement Project workshops. Suggestions for improvements from the workshops were consistent with the Local Citizens Committee reports, noting that information presented in the notices, at information centres and in public summaries is too complicated and technical, and is not relevant to most people. The consultation process confused some people, who did not understand the purpose of each stage. To make more efficient use of consultation time, some people suggested an additional notice of the upcoming information centre and more time for plan review. Participants also expressed a need to hold information centres where public interest is the greatest and at more convenient times of the year.

Comments at the Forest Management Planning Improvement Project workshops stressed the need for easier access to FMP information by having the information available after business hours at public libraries and on the Internet. Comments also included suggestions to send notices electronically in addition to the newspaper ads and direct mailouts. In addition, participants expressed the need to ensure that mailing lists are up to date, and the need to solicit direct input into area of concern planning early in the process.

Native Consultation Process

In addition to, and parallel with, the five-stage public consultation process, the FMP Manual includes an option for Native communities to choose additional consultation and documentation opportunities, referred to as the Forest Management Native Consultation Program. This program includes: notices to band councils, and Native communities and organizations; community meetings or forums; and the preparation and review of Native Background Information Reports and Reports on the Protection of Identified Native Values.

Aboriginal participation in forest management planning is increasing. From 1997 to 2001, 23 planning teams had representatives from First Nations. Twenty-five Local Citizens Committees had representatives from First Nations, although all LCCs invited participation. Ten FMPs had First Nations representatives on both the Local Citizens Committee and planning team.

The documentation in FMPs indicates that many First Nations pursued the optional Native Consultation program but subsequently stopped participating at some point in the process. The reasons for this are not consistently documented in FMPs. FMPs approved in 1999 or later indicate increased involvement by the Aboriginal community.

The satisfaction of First Nations with their participation in the forest management planning process has varied across the province. There has been positive acceptance and involvement by some First Nations, although other First Nations feel that the process does not address their needs and their way of communicating. Participants in the Forest Management Planning Improvement Project indicated that verbal and face to face communication is valued in Aboriginal communities. Participating First Nations also report having no control over the planning schedule, when they receive information, and the review period for draft and final FMPs.

The collection of Native values information has been a challenge for some planning teams. Aboriginal people consider their values to be both physical (e.g., gravesites) and intrinsic (e.g., spiritual areas). Intrinsic Native values are difficult to identify and protect. Some First Nations have expressed concerns about the confidentiality and protection of the information they provide due to fears that Native values may be destroyed if their locations are made public. There is a reluctance to provide Native values information if it is to be used for other MNR programs. To address this concern, some communities have requested that the Native Background Information Reports not be included in the FMPs, and that requests for copies of the reports be made to the First Nations. Some First Nations object to providing a copy of the Native Background Information Report and Native values maps to the Ontario Native Affairs Secretariat, due to confidentiality concerns and sensitivity of the values being collected. Jurisdictional issues, resource conflicts and land claims are other concerns that some First Nations have in providing values information to MNR.

Some First Nations reported in the Native Background Information Reports and through the Forest Management Planning Improvement Project that they require more expertise and time to participate fully. Some feel the planning process is long and complicated; a lot of information is presented; and insufficient time is allocated to review and comment given the resources available within the communities.

A few of the Native Background Information Reports in FMPs indicated that some First Nations felt left out of the process. Some First Nations reside outside the management unit where an FMP is being planned and as such were not provided the option to participate in the Native Consultation Program. Some of these communities have traditionally used the area and have an interest in forest management and assert that the collection of Native values should be done on a treaty-wide basis. Two Local Citizens Committee reports recommend more effort be made to better communicate with First Nations to prevent conflicts.

Concerns by members of First Nations have resulted in requests to the Ministry of the Environment for the designation of specific proposed forest management activities to the status of an individual environmental assessment by way of a bump-up request. Aboriginal concerns accounted for 18% of the bump-up requests on FMPs approved from May 19, 1994 to September 1, 2001 (see the progress report for T&C 114(a)(iii) Bump-up Requests, for more information).

Bump-up requests were based on the following concerns: the Native Background Information Reports failed to protect Native values and the rights of the First Nations in their traditional land use area; the lack of community participation in the development of the reports; treaty and Aboriginal rights; the protection or identification of Native values; and concerns regarding the MNR implementation of T&C 77. The Minister of the Environment denied the bump-up requests. Two bump-ups were denied with the condition that before MNR approved activities in an Annual Work Schedule, MNR must be satisfied that best efforts to understand and deal with mutual concerns have been put forward by both the forest company and the First Nation. Two other bump-ups were denied with the condition that respective FMPs would be amended to include appropriate protection of the identified Native values. Where concerns of the First Nations had not been addressed through the amendment, the Minister of the Environment encouraged MNR and the forest company to seek outside mediation to bring resolution to the situation.

Aboriginal peoples have also identified some underlying issues associated with forest management, such as treaty and Aboriginal rights and MNR's duty to consult with Aboriginal peoples. Participants in the Forest Management Planning Improvement Project have expressed a desire to increase Aboriginal participation in forest management planning. However, some Aboriginal communities believe that participating in the preparation of the FMP may affect their land claim negotiations, their treaty rights and negotiations to increase economic development opportunities. Some Aboriginals believe forest operations infringe on their rights to the land and resources, and the infringement should trigger discussions on compensation. Participants in the Forest Management Planning Improvement Project suggested that the process does not protect their values and their rights to the land and resources.

Issue Resolution Procedure

Any person concerned with proposed operations in an FMP has the opportunity to follow a formal issue resolution procedure in order to ensure that the issue is dealt with fairly, fully and promptly. The issue resolution procedure outlined in the FMP Manual, consistent with the EA Approval, requires the concerned person to identify the issue to the plan author and offer a solution. If the person does not feel that the issue has been resolved through discussions with the plan author, the issue can be brought to the MNR District Manager for consideration and resolution, with advice from the Local Citizens Committee. If the concerned person feels that the MNR District Manager's decision does not adequately address the concern, the MNR Regional Director can be asked to review the MNR District Manager's decision. In addition, the concerned person has the opportunity at any time to make a bump-up request to the Minister of Environment and Energy.

FMPs approved between 1997 and 2001 documented 39 issues addressed through the formal issue resolution procedure. Fourteen of these issues were resolved with the plan author or planning team. Tourist operators were involved with nearly half of the 39 issues requiring formal issue resolution. Individual forest users were involved in one-quarter of the issues. These issues related to road access, location of harvest operations, and ecological sustainability of the FMPs. The remaining issues were those of Aboriginal peoples, anglers and hunters, trappers, non-government organizations, Parks Canada and recreational users. Approximately half of the 39 issues requiring issue resolution were not resolved to the satisfaction of the concerned party and resulted in a bump-up request to the Ministry of the Environment.

The EA Board concluded that the issue resolution and bump-up procedures are interrelated, suggesting that "…the issue resolution process has greater potential for finding practical, faster solutions to problems than does the bump-up provision, and that recourse to bump-up can derail issue resolution if the two are parallel processes" (Koven and Martel, 1994, Page 105). It was anticipated that in most circumstances the Minister of Environment and Energy decision on a bump-up request would follow completion of issue resolution.

Attempts to address concerns through the issue resolution procedure were not always used before a bump-up request was made. Since the EA Approval, 57% of bump-up requests were made for issues which had not been through the issue resolution procedure. In many cases, these requests involved new issues to the planning teams and were received very late in the planning process, e.g., after FMP approval. In other cases, the requestor did not initiate issue resolution before requesting the bump-up, or the FMP was already being implemented at the time of the bump-up request. Participants at the Forest Management Planning Improvement Project workshops repeated the need to ensure the formal issue resolution procedure is followed before the opportunity to request a bump-up.

Synopsis

The forest management planning public consultation process has been successful, as demonstrated by the Local Citizens Committees reports, summaries of the results of public consultation and Native consultation, and the issue resolution process. A number of areas of improvement have been identified based on the implementation experience. These improvements generally involve refinements to the process, and would not involve wholesale change. However, comments and concerns from Aboriginal peoples have prompted MNR to recommend new changes to the Native Consultation Program. These are described in Section 3.1.3 Public and Aboriginal Consultation, of this Timber Class EA Review.

Local Citizens Committees actively participated in the forest management planning process. Most members felt that they are effectively participating in local forest management planning. The committees suggested improving their effectiveness through more clearly defining the roles of the committees, reviewing the need to have the Local Citizens Committee advise on the category of all amendments, providing relevant training to committee members, giving the committee more prominence during public consultation, and recognizing the time commitment required to be an effective member.

Opportunities for public participation were provided for FMPs as required by the FMP Manual. The current process is providing effective opportunities for public participation. For the most part, the planning process is considered to be fair, effective, and efficient. The more knowledgeable people are of the process, the more satisfied they are with the process and its outcomes.

The attendance at information centres varied across the province. Those who participated represented a wide range of public interests. Suggestions to improve participation, as elicited from Local Citizens Committees and the Forest Management Planning Improvement Project, include ensuring the language in notices and in information available for public distribution is less technical and addresses the needs of most participants. Providing access to planning information after hours, at public locations, and electronically, as well as holding information centres at more opportune locations and times, would facilitate participation.

Attempts are being made to improve the involvement of Aboriginal communities in forest management planning and there has been an increase in participation since 1999. Some challenges exist in improving Aboriginal participation such as fears that participation will affect treaty, land claim, and economic development negotiations and concerns about MNR's implementation of T&C 77. Aboriginal community members have made bump-up requests to the Ministry of the Environment to address their concerns.

The issue resolution procedure was used during the preparation of some FMPs. Fourteen of 39 issues requiring formal issue resolution were resolved with the plan author or planning team. Approximately half of the 39 resulted in a bump-up request to the Ministry of the Environment, all of which were denied. The issue resolution procedure was not always used to try to resolve issues before a bump-up was requested on a FMP. This resulted in parallel processes and the derailing of the issue resolution procedure – the very situation the EA Board wished to avoid. MNR is making recommendations requiring the use of the issue resolution process prior to proceeding with a bump-up request in Section 3.1.4 Issue Resolution and Bump-up of the Timber Class EA Review.

Contingency Plans - T&C 114(a)(viii) and 66 and Appendix 12

Current Requirement

Term and condition 114(a)(viii) requires MNR to review a complete record of all contingency plans.

Term and condition 66 and Appendix 12 and parts of T&Cs 1, 3, 60 and 61 prescribe the requirements for the preparation, review and approval of a contingency plan, which is required when an FMP cannot be prepared and approved by the scheduled renewal date. Parts of T&Cs 6 and 8(b) and Appendices 2(B), 3(B), 3(E) and 4(B) prescribe the requirements for public consultation in the preparation of a contingency plan.

> ***T&C 114(a)(viii)***
>
> *(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding the extension and amendment of this approval on the basis of supporting information which shall consist of:*
> *(viii) a complete record of all Contingency Plans as set out in Condition 66 and Appendix 12;*

> ***T&C 66***
>
> *Where a Timber Management Plan cannot be prepared and approved before the required date, a Contingency Plan shall be prepared and approved as an interim Timber Management Plan before operations may proceed. The particulars of this condition are set out in Appendix 12*

Progress Report

A contingency plan is an interim FMP that is required if an FMP cannot be prepared or approved by the scheduled renewal date. An approved contingency plan permits operations to continue until an approved FMP is in place. The content of a contingency plan, the nature of public consultation, and the planning that is required depends on the circumstances encountered. Contingency planning is the process used to allow forest operations to continue while planning issues are being addressed. This avoids social and economic issues in forest-based communities that could otherwise result from undue delays in FMP preparation and approval.

The FMP Manual describes two main reasons for contingency plans: delay in FMP review and approval and delay in FMP preparation. When there is a delay in FMP review and approval, most of the forest management planning, including the public consultation efforts, has already been completed at the time of contingency plan preparation. For a delay in FMP preparation, little to no planning effort or associated public consultation may have occurred. Therefore, a greater amount of planning effort is required when developing a contingency plan resulting from a delay in FMP preparation, than for those where there is a delay in FMP review and approval.

The public consultation requirements for the preparation of a contingency plan, therefore, depend on the degree to which proposed operations have already been reviewed by the public in the forest management planning process. At a minimum, one public consultation stage must be used in the preparation of the contingency plan – namely, the inspection period for the approved contingency plan. MNR must consult with the Local Citizens Committee regarding the design and implementation of public consultation for the contingency plan.

To initiate the planning process for a contingency plan, a proposal for a contingency plan is prepared by the plan author, in conjunction with staff from MNR. The MNR Regional Director submits the proposal to the Ministry of Environment and Energy. Upon endorsement of the proposal by the Ministry of Environment and Energy, preparation, review and approval of the contingency plan proceeds.

Results

MNR has conducted a review of all contingency plans approved from May 19, 1994 to September 1, 2001, as part of preparing this Timber Class EA Review. Detailed information used to create this progress report is retained with MNR's Forest Management Branch.

Thirty-seven contingency plans were approved by MNR in this period. Of these 37 contingency plans, 22 were required because of a delay in FMP preparation, 11 because of a delay in FMP review and approval, and four were required for other reasons.

The most common reason for a delay in FMP preparation was to allow for an adjustment to the FMP renewal schedule for an individual management unit. For instance, this accounted for seven of the 12 contingency plans approved in 1995.

Other reasons for delays in FMP preparation during the period examined include:

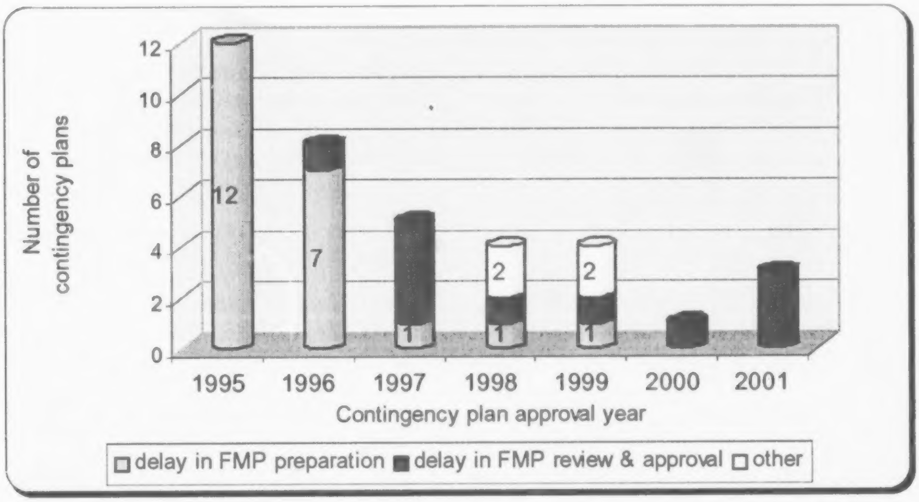
- Waiting for the outcome of a local land-use planning process (Temagami).
- Delay in planning and forest resource inventory delivery.
- Alignment of FMP renewal schedules for management units that were being amalgamated.

Delays in FMP review and approval were caused by outstanding issues from the FMP process for seven contingency plans. Three of the contingency plans were required to allow more time for required alterations that involved extensive changes to draft FMPs. The remaining contingency plan was required because of extensive fire damage to the forest company's mapping equipment.

The preparation of two of the contingency plans resulted from the decision of the Divisional Court in *Algonquin Wildlands League et al vs. Ontario (Minister of Natural Resources)*. Two other contingency plans were required in order to recognize management unit amalgamation.

Figure 14 shows that the number of contingency plans approved as a result of a delay in FMP preparation seems to be decreasing each year since the approval. The number of contingency plans approved because of delays to FMP review and approval vary from year to year.

Figure 14. Number of contingency plans approved by year of approval and by reason (May 19, 1994 to September 1, 2001).



The Ministry of the Environment included conditions on their endorsement of 12 of the contingency plan proposals. Seven of these included conditions for the Local Citizens Committee to review any concerns that were raised during the inspection period for the approved contingency plan and to make recommendations to the MNR District Manager for the resolution of such issues. The Ministry of the Environment requested a copy of the approved contingency plans in five of the endorsements.

For the two contingency plans resulting from the Divisional Court decision, the Ministry of the Environment included a condition that the applicants for the judicial review were to receive direct notice of public consultation opportunities during the development of the contingency plan.

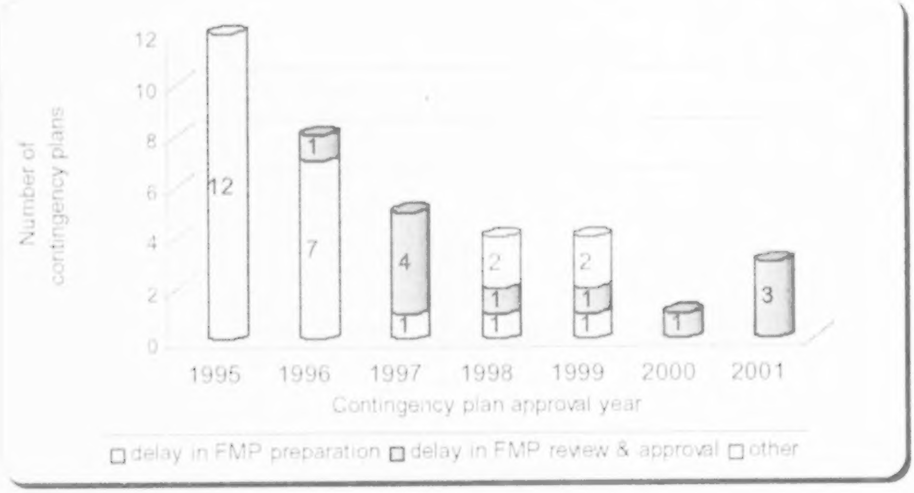
Other conditions from the Ministry of the Environment include:

- Addition of a bump-up opportunity to the public consultation stages.
- Request to keep the Ministry of the Environment informed of contentious issues as they arise.

Contingency plans resulting from a delay in FMP preparation were required for a longer amount of time than those resulting from a delay in FMP review and approval, with an average planned period of 15 months and six months, respectively. The four contingency plans that were required for other reasons had an average duration of 18 months.

All of the contingency plans required because of a delay in FMP review and approval used one stage for public consultation - the inspection period for the approved contingency plan. This was considered appropriate because the source of the strategic direction and planned operations (i.e., primary and secondary roads, harvesting, and renewal and tending) were the draft FMPs. The draft FMPs had already undergone extensive consultation at the time of the preparation of these 11 contingency plans.

Figure 14. Number of contingency plans approved by year of approval and by reason (May 19, 1994 to September 1, 2001).



The Ministry of the Environment included conditions on their endorsement of 12 of the contingency plan proposals. Seven of these included conditions for the Local Citizens Committee to review any concerns that were raised during the inspection period for the approved contingency plan and to make recommendations to the MNR District Manager for the resolution of such issues. The Ministry of the Environment requested a copy of the approved contingency plans in five of the endorsements.

For the two contingency plans resulting from the Divisional Court decision, the Ministry of the Environment included a condition that the applicants for the judicial review were to receive direct notice of public consultation opportunities during the development of the contingency plan.

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- Addition of a bump-up opportunity to the public consultation stages.
- Request to keep the Ministry of the Environment informed of contentious issues as they arise.

Contingency plans resulting from a delay in FMP preparation were required for a longer amount of time than those resulting from a delay in FMP review and approval, with an average planned period of 15 months and six months, respectively. The four contingency plans that were required for other reasons had an average duration of 18 months.

All of the contingency plans required because of a delay in FMP review and approval used one stage for public consultation - the inspection period for the approved contingency plan. This was considered appropriate because the source of the strategic direction and planned operations (i.e., primary and secondary roads, harvesting, and renewal and tending) were the draft FMPs. The draft FMPs had already undergone extensive consultation at the time of the preparation of these 11 contingency plans.

Half of the contingency plans required because of a delay in FMP preparation included two stages for public consultation during contingency plan development. This involved an information centre or a draft contingency plan review period and the inspection period for the approved contingency plan. Nearly all of the remaining contingency plans included three or four stages for public consultation, which included the addition of an invitation to participate stage. The two remaining contingency plans resulting from a delay in FMP preparation used only the inspection period for the approved FMP.

Nearly three-quarters of the contingency plans required because of a delay in FMP preparation used the strategic direction and planned operations that were already approved under a previous FMP or contingency plan. Draft FMPs were another source for strategic direction and planned operations. Some of these contingency plans included new strategic direction and planned operations that had not undergone previous consultation. The extent of the new strategic direction and planned operations to be included in each contingency plan influenced the number of public consultation stages that were used.

All of the contingency plans approved harvesting, renewal and tending activities. Planned primary and secondary roads were approved in 41% and 62% of the contingency plans, respectively.

Synopsis

MNR has completed a review of the contingency plans approved between May 19, 1994 and September 1, 2001. There are a number of circumstances where delays occurred during the preparation, review and approval of an FMP. Thirty-seven contingency plans were required during this period to prevent undue delays in forest operations, which can cause social and economic issues in forest-based communities.

Contingency plan proposals were developed to address the specific planning requirements for each contingency plan. In endorsing the proposals, the Ministry of the Environment applied conditions in some cases to address individual circumstances for a contingency plan.

The majority of the contingency plans were required because of a delay in FMP preparation, with an average planned period of 15 months. Nearly a third of the contingency plans were required because of a delay in FMP review and approval, with an average planned period of six months. Experience has shown that there were additional circumstances under which contingency plans were also required.

MNR is making recommendations regarding contingency plans in Section 3.1.9 Amendments to Forest Management Plans; Contingency Plans and Insect Pest Management Programs, of the Timber Class EA Review.

Major Problems Identified Through Independent Forest Audits - T&C 114(a)(ix) and 86

Current Requirement

Auditing is a fundamental component of monitoring. Audits periodically examine operations and records for the purpose of substantiating that the objectives of management activities are being achieved, that technical standards are being met, and that policies are being followed. Term and condition 114(a)(ix) required MNR to review and make recommendations on the complete record of the major problems identified through the independent audit program as provided in T&C 86.

Term and condition 86 required MNR to conduct independent audits of each Forest Management Agreement area every five years, and to report the results to the Legislature. The requirements for these audits are outlined in T&C 86 and Appendix 25 and also required that six Crown and company management units be audited annually, beginning with those units with the greatest volume of wood harvested.

> *T&C 114(a)(ix)*
>
> *(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit that review to the Minister of Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:*
>
> *(ix) a complete record of major problems identified through the independent audit program as provided in Condition 86.*

> *T&C 86*
>
> *(a) MNR shall undertake operational audits, through the appointment of suitably qualified independent audit teams, which will include an assessment of compliance with the timber management planning process, approved Timber Management Plans, implementation manuals, and provincial policies, procedures, and legislation. At least one member of the Audit team shall be a Registered Professional Forester. Terms of reference for these audits are set out in Appendix 25.*
>
> *(b) The audits shall assess the effectiveness of timber management activities in achieving management objectives. These audits will include any assessments of silvicultural effectiveness.*
>
> *(c) MNR shall design a set of procedures and guidelines for the undertaking of these audits. These procedures and guidelines shall be designed to empower an appointed audit team to act as an independent body. The guidelines and procedures will also be constructed to meet the requirements of Section 6 of the Crown Timber Act, R.S.O. 1990, c. C.51, as amended, in order that the Minister of Natural Resources may report to the Legislature.*
>
> *(d) MNR shall provide remuneration and expenses for each audit team. MNR shall provide funding for the preparation and publication of the audit report by each appointed audit team.*
>
> *(e) Each Forest Management Agreement in the province shall be audited every five years. In addition, six Crown and Company Management Units shall be audited each year, starting with those units with the greatest volume of wood harvested. The audit shall examine the activities over the past five-year period beginning at a point in time which will allow*

comparison of three years of the previous Timber Management Plans and two years of the current Plan.

(f) Audit reports shall be published by the audit team no later than four months after the initiation of the audit.

(g) The independent audit teams shall provide an opportunity for the Local Citizens Committee for the forest management unit which is the subject of the audit to comment on management practices and to provide any other relevant information.

Progress Report

The new business relationship between MNR and the forest industry and the enactment of the *Crown Forest Sustainability Act* in 1995 resulted in a transition from Forest Management Agreements to Sustainable Forest Licences and in the transfer of operational aspects of forest management to Sustainable Forest Licences. Many Crown and company management units were also converted to Sustainable Forest Licences over time.

The consulting firm of Ernst & Young designed the original Independent Forest Audit Process and Protocol in 1995, under contract to MNR. The Independent Forest Audit Process and Protocol was prepared in response to T&Cs 86 and 87, and *Crown Forest Sustainability Act* requirements. The Independent Forest Audit Process and Protocol outlines comprehensive criteria and procedures for auditing and is much broader in scope than the requirements of T&Cs 85, 86 and 87 combined.

Audit teams are required to be independent and interdisciplinary and include a Registered Professional Forester. The Independent Forest Audit Process and Protocol includes an assessment of compliance with the forest management planning process, approved FMPs, implementation manuals, and provincial policies, procedures, and legislation. It requires the auditor to examine the effectiveness in achieving management objectives, to examine the effectiveness of monitoring programs, including silvicultural effectiveness, and to consider and comment on the status of both timber and non-timber information on the management unit.

Term and condition 86(d) requires MNR to fund these audits. In 1996 MNR paid for the Independent Forest Audits from its base program budget, but the Forestry Futures Trust, whose funds are generated from Crown charges, has paid for audit work since then. At the same time, the Forestry Futures Trust Committee has played a valuable role in contract administration by ensuring that auditors have met their contractual obligations. In 1998 the role of the Forestry Futures Trust Committee expanded further to include the selection of audit firms.

Term and condition 86(e) states that every forest management agreement in the province shall be audited every five years and that six Crown and company management units shall be audited each year, beginning with the units with the greatest volume of wood harvested. Given the number of management units, the EA Board estimated that it would take approximately ten years to audit them all. This requirement has been exceeded. By the end of 2001, all management units in the province had been audited at least once, and five had been audited twice. Where possible, the MNR has timed audits to coincide with the scheduling requirements of T&C 86(e) with adjustments necessary in the circumstances to address the increased level of auditing, timing precedents set by previous Forest Management Agreement reviews and management unit amalgamations.

The Minister of Natural Resources tables all audit reports in the Legislature. The four-month timeframe for publishing the audit reports, as required by T&C 86(f) has proven to be a challenge. The broad scope and comprehensive nature of the Independent Forest Audit Process and Protocol, the large number of people involved in the preparation and review of audit reports, and the additional time necessary to meet MNR's requirement to develop action plans have all made the four-month timeframe difficult to attain. The timing of publishing of audit reports has been variable; however, the majority of the reports have been published within one year of the audit. Prompt tabling in the Legislature and public distribution of audit reports is recognized as a necessary area of improvement. MNR has set a target for each year's audits to be submitted to the Minister for tabling in the Legislature, by the end of the fiscal year.

Term and condition 86(g) requires that the audit teams provide the Local Citizens Committees with an opportunity to comment on management practices and to provide any other relevant information. Since 1996, Local Citizens Committees have been included in the pre-audit meeting to give them the opportunity to identify issues related to forest management practices on the management unit. Local Citizens Committees are also provided with a copy of the final audit report and associated action plan. In addition, the audit team interviews a sample of Local Citizens Committees members. Subsequent revisions to the Independent Forest Audit Process and Protocol have been made, and Local Citizens Committees are provided an opportunity to have a member participate in all components of the field audit, including the opening and closing meetings, and field work where feasible.

A summary of the major problems identified by the independent forest audit program, beginning with the four pilot audits in 1996, up to and including all 2000 audits, are listed as follows. Problems that the audits reported were grouped into categories by MNR, and each category of problem was considered to be a 'major' problem. The findings of the Independent Forest Audits have been published and are available on request from MNR's Forest Management Branch.

Major Problems Identified by the Independent Forest Audit Program

1. Planned harvest targets were not met on some management units. This is particularly true for poplar, white birch and poorer quality tolerant hardwood species. Markets for these species are required in some areas.
2. Effective information management is critical for monitoring and predicting how well the forest is growing. Many information management issues were raised in the audits, for example: inadequate forest inventory and lack of timely silvicultural effectiveness surveys on some management units.
3. Instances of non-compliance continue to be an issue on some management units. Common infractions relate to water crossings, trespasses and utilization. In some cases, the auditors indicated that MNR's follow-up on compliance issues was inadequate.
4. Poor quality water crossings, particularly culverts installed by overlapping licensees, are of concern because of potential detrimental effects on fisheries habitats. Auditors recommended that those installing culverts needed additional training. In addition, older abandoned roads are in various states of disrepair but they continue to be used, which raises concerns about public safety.
5. Values data, such as the location and type of fish and wildlife values, which are required to develop and implement FMPs, are in some cases inadequate or incomplete.
6. Slash pile accumulation, which reduces available productive forest land and removes nutrients from the harvested area, continues to be an issue on some units.

7. Operational silvicultural practices, such as the retaining the conifer component in mixedwood stands, could be improved.
8. Current operating procedures for Local Citizens Committees differ across the province resulting in variable effectiveness.
9. Audit reports recommend that MNR improve plan development and implementation direction provided to forest management planning teams. Additional concerns relate to the need for adequate documentation during the amendment process, particularly in relation to public consultation.
10. The accuracy, analysis and timeliness of management unit annual and five-year (Report of Past Forest Operations) reporting as required by the FMP Manual, the *Crown Forest Sustainability Act* and the EA Approval needs to be improved.
11. The establishment of a strong working relationship between First Nations, MNR and the forest industry continues to be challenging on some management units.
12. Management units currently managed by the Crown should either be converted to a Sustainable Forest Licence or adequate resources provided to continue management by MNR prior to conversion to a Sustainable Forest Licence.

An action plan was prepared and approved for each audit report. These action plans document the corrective actions that will be undertaken in response to audit findings. A status report on each action plan must be submitted two years after the action plan is approved. In addition, the recommendations from management unit audits are considered during the development of the next FMP.

Information on major problems identified by independent forest audits can be found in Section 4.1.b.k. of the State of the Forest Report, 2001, page 4-16.

Synopsis

MNR has developed a comprehensive Independent Forest Audit Process and Protocol and has undertaken the audits required by T&C 86. This Independent Forest Audit Process and Protocol also reflects the requirements of the *Crown Forest Sustainability Act* and the new business relationship between MNR and the forest industry regarding forest management responsibilities on the various categories of management units.

The Independent Forest Audit Program has been thorough and effective, providing the information required to ensure problems in forest management are identified. Action plans are prepared to address problems identified in each audit. Status reports monitor the progress in implementing action plans. In addition, the recommendations from management unit audits are considered during the development of the next FMP.

MNR is making recommendations regarding the audit program in Section 3.2.2.1.. of the Timber Class EA Review.

Regeneration Expenditures – 114(a)(x), 38(a), Appendix 8(1), 18(1), 20(1) and 22(1)

Current Requirements

Term and condition 114(a)(x) requires MNR to review a complete record of estimated, or forecasted, regeneration expenditures as planned in FMPs and annual work schedules, and actual regeneration expenditures as reported in management unit annual reports, management unit reports of past forest operations, Provincial Annual Reports on Forest Management and the State of the Forest Report.

T&C 114(a)(x)

(a) During the eighth year of this approval, MNR shall undertake a review of this undertaking and submit the review to the Minister of the Environment and Energy and shall make the review publicly available at the same time. The review shall make recommendations regarding an extension and amendment of this approval on the basis of supporting information which shall consist of:

(ix) a complete record of estimated and actual spending to achieve regeneration objectives as provided for in Condition 38(a); Appendix 8, section 1(a)(iv); Appendix 18, section 1(o); Appendix 20, section 1(g); and Appendix 22, section 1(k).

T&C 38

(a) Each Timber Management Plan shall contain a forecast of the level of activity for tending and renewal operations (e.g. site preparation, planting, seeding, natural regeneration and tree improvement support) planned to be carried out during the five-year term of the Plan, and an estimate of the amount of spending required to achieve the regeneration goals.

Appendix 8: Report of Past Forest Operations

1. The Report of Past Forest Operations shall contain the following information concerning implementation of operations on the forest management unit during the five-year term of the previous Timber Management Plan:

(a) Statistical information comparing planned and actual activities for the previous five-year term including:

(iv) area tended and area regenerated and the spending incurred to implement these activities by treatment method including but not limited to site preparation, planting, seeding, natural regeneration and tree improvement support.

Appendix 18: Annual Report (Forest Management Unit)

1. The Annual Report shall contain the following information concerning implementation of operations on the forest management unit during the preceding year:

(o) Forecast and actual spending on tending and regeneration, pursuant to Condition 38(a).

Appendix 20: Provincial Annual Report on Timber Management to the Legislature

1. The Annual Report on Timber Management shall include:

(g) Forecast and actual spending on tending and regeneration, pursuant to Condition 38(a).

Appendix 22: State of the Forest Report

1. The State of the Forest Report shall include:
(k) Forecast and actual spending on tending and regeneration, pursuant to Condition 38(a).

Progress Report

Securing Renewal Funding

Prior to 1994, the Ontario government paid for forest renewal from funds approved annually in the Ontario provincial budget. One of the EA Board's concerns had been MNR's decreasing financial commitment to regeneration. Concerns were expressed during the EA hearing regarding "…the uncertainty of long-term funding for forest renewal…," and that "…reductions in artificial regeneration treatments will adversely impact wood supply…" (Koven and Martel 1994, Page 225). The EA Board ordered conditions to report on silvicultural funding requirements and actual expenditures.

Fundamental change has occurred in how the renewal of Ontario's Crown forests are financed. With the passing of the *Crown Forest Sustainability Act*, Sustainable Forest Licences require the licensees, namely the forest industry, to carry out renewal and maintenance activities necessary to provide for the sustainability of the Crown forest. The act also provides for the establishment of three types of funds to be used for renewal purposes: Forest Renewal Trust, Special Purpose Account and Forestry Futures Trust. The forest industry is required to make payments into these funds through a portion of their Crown charges derived from the harvest of Crown timber.

The Forest Renewal Trust secures funding for forest renewal purposes for each management unit, ensuring that silvicultural funding is sufficient to provide for forest renewal. Each management unit has its own account, from which the funds may be used to conduct eligible silviculture work on the specific management unit from which the funds were generated. The forest renewal charge varies on a management unit depending on species being harvested and anticipated renewal costs to regenerate the site.

Forest resource licence holders who do not traditionally operate on a Sustainable Forest Licence pay their renewal charges into a separate account in the Consolidated Revenue Fund, known as the Special Purpose Account. This account provides dedicated funding for forest renewal on management units where harvesting and other operations are conducted on Crown land that is not covered under a Sustainable Forest Licence. MNR is responsible for administration of the Special Purpose Account. Each management unit has its own separate account to cover forest renewal costs. MNR has been in the process of transferring the forest management responsibilities on these management units to Sustainable Forest Licensees. The Special Purpose Account is intended to be phased out once a Sustainable Forest Licence is in place for those management units, at which time the money in the Special Purpose Account is transferred to the Forest Renewal Trust.

Transition funding was provided by MNR to the Forest Renewal Trust and Special Purpose Accounts to provide an adequate level of 'start-up' capital and to ensure ongoing viability of the accounts.

The forest renewal charges for a management unit are reviewed annually and adjusted when appropriate, with the costs of scheduled and forecasted levels of silviculture providing the basis for the review. Adjustments to the forest renewal charge ensure the availability of future renewal funding activities.

In addition, the *Crown Forest Sustainability Act* provides for a Forestry Futures Trust to dedicate silvicultural funding in response to unforeseen events such as fires, natural damage and licensee insolvency; and for intensive stand management and other purposes specified by the Minister of Natural Resources. Before 1996, the Forestry Futures Trust was collected from the forest industry through the annual area charges applied to each management unit. Currently, the forest industry pays into this trust as part of the Crown charges for timber harvested and through any penalties that are assessed under the *Crown Forest Sustainability Act*.

The Forestry Futures Trust fund is managed by an independent committee established by the Crown, and funds projects that meet MNR-approved criteria. A portion of the Forestry Futures Trust was established as a special conversion to be used to assist new Sustainable Forest Licensees with costs associated with the establishment of a Sustainable Forest Licence. The current Sustainable Forest Licence holders, that is the forest industry, paid for the conversion through a portion of the Crown charges being deposited as conversion funding within the Forestry Futures Trust fund until the 1998/1999 fiscal year.

Table 9 includes a summary of forest industry payments into the two trust funds and the Special Purpose Account since April 1, 1995, as reported in the State of the Forest Report, 2001.

Table 9. Forest industry payments ($ 000s) to the Forestry Futures Trust, Forest Renewal Trust and the Special Purpose Account from 1995/96 to 1999/00.

Year	Forestry Futures Trust	Forest Renewal Trust	Special Purpose Account	Total Payments
1995-96	7,121.3 (a)	58,628.6	36,505.5	102,255.4
1996-97	7,861.4	51,628.9	34,755.1	94,245.4
1997-98	10,576.7 (b)	52,373.5	44,159.0	107,109.2
1998-99	20,605.3 (c)	71,298.9	28,930.8	120,835.0
1999-00	10,050.7 (d)	78,668.1	5,147.9(e)	93,866.7

Source: State of the Forest Report, 2001, Page 4-10
(a) For the period February 7, 1995 to March 31, 1996
(b) Includes conversion funds of $4,428,900 collected in 1997-98
(c) Includes conversion funds of $8,418,167 collected in 1998-99
(d) Includes conversion funds of $1,640,892 collected in 1999-00
(e) Amounts are as of March 31, 2000

As Table 9 shows, the forest industry payments decreased in the 1999/2000 fiscal year because conversion charges were no longer being applied. The funding in the Special Purpose Account has been decreasing since 1995 as more Sustainable Forest Licences were issued on those management units that were formerly managed by the Crown, i.e., the funding was transferred from the Special Purpose Accounts to the Forest Renewal Trust.

Total spending levels for forest renewal are reported annually in the Provincial Annual Reports on Forest Management, and were reported in the State of the Forest Report, 2001. Table 10 includes a breakdown, by funding source, of the total forest renewal expenditures reported over the last five years.

Table 10. Forest renewal, tending, and protection expenditures by source from 1995/96 to 1999/00 ($ millions).

Year	**MNR** (renewal, tending, pest control)	**Forest Renewal Trust** (renewal, tending)	**Forestry Futures Trust** (renewal, tending, pest control)	**Special Purpose Account** (renewal, tending, pest control)	**Total**
1995-96	38.6	NR	NR	37.9	76.5
1996-97	7.9	44.6	9.1	22.2	83.8
1997-98	7.7	68.2	8.8	15.0	99.7
1998-99	2.8	92.6	9.2	6.9	111.5
1999-00	0.9	88.9	10.4	2.5	102.7

NR = Not Reported
Source: State of the Forest Report, 2001, Page 4-10

While Table 10 shows that MNR expenditures have decreased substantially, this has been more than offset by the forest industry payments to the Forest Renewal Trust, Special Purpose Account and the Forestry Futures Trust. Renewal and tending expenditures for each management unit reflect the costs to regenerate the forest. These costs change over time.

The EA Board stated that they were "…concerned, however, that government spending on renewal is declining: from $45.6 million in 1990-91 to $39.7 million in 1991-1992 to a projected $33.4 million in 1992-93…" (Koven and Martel 1994, Page 225). As a result of the *Crown Forest Sustainability Act*, and the associated fundamental change in how the renewal of Ontario's Crown forests is financed, regeneration expenditures have increased substantially since the early 1990s.

Estimated and Actual Regeneration Expenditures

The FMP Manual requires documentation of the estimated, or forecasted, expenditures for renewal and tending in FMPs and annual work schedules. In FMPs, the revenues – part of which includes the dollars dedicated to forest renewal through Crown charges – and expenditures are planned as five-year forecasts. The scheduled annual revenues and expenditures are set out in the management unit annual work schedules. The FMP Manual requires the actual revenues and expenditures for renewal and tending for a given year to be reported in the management unit annual report, with the summary of five years of actual revenues and expenditures reported in the management unit report of past forest operations.

Term and condition 38(a) and the FMP Manual require the expenditure information to be documented by activity level, such as total expenditures for planting and total expenditures for site preparation. Full disclosure of the costs of a particular silviculture practice (and payments made to contractors for those costs) may put forest companies at a competitive disadvantage. Therefore, MNR has not required the forest industry to forecast or report silvicultural expenditures by activity in forest management planning. In most cases, the forest industry has provided a total amount of forecasted and actual renewal and tending expenditures for the plan period or reporting period.

In addition to monitoring renewal and tending expenditures, there are additional checks and balances in place to ensure that the forest renewal program is being implemented as planned in FMPs. The amount and type of renewal activity, and the success of these activities in meeting the desired future forest condition, is monitored on the management unit. See the progress report for T&C 96 Silvicultural Effectiveness Monitoring for more information.

In accordance with the phase-in provisions in Appendix VIII of the FMP Manual, FMPs approved and implemented starting in 1998 were the first to include forecasting of expenditures for renewal and tending. Table 11 summarizes the five-year forecasted expenditures from FMPs that have been approved since 1998.

Table 11. Summary of the five-year forecasted renewal and tending expenditures as documented in FMPs ($ millions).

Plan Term	Number of FMPs	Forecasted Expenditures ($ 000s)*
1998-2003	9	54,214.254
1999-2004	12	90,696.466
2000-2005	15	202,265.510

*Errors in some of the FMPs were detected during compilation. Errors have been corrected to produce this summary.

Most management units started reporting on actual renewal and tending costs in annual reports for the 1996/1997 fiscal year. Given that these management unit annual reports are reporting on FMPs that were approved before 1998, there are no forecasts for regeneration expenditures for comparison purposes.

Table 12 includes actual renewal and tending expenditures as reported in management unit Annual Reports. The figures do not reflect the total actual expenditures given that some management unit annual reports were not available at the time of compilation. The State of the Forest Report, 2001, Page 4-81, includes the forecast and actual spending on tending and regeneration for each management unit from 1996 to 2000.

Table 12. Summary of reported renewal and tending expenditures as documented in management unit annual reports ($ millions) since 1996/1997.

Fiscal Year	Number of Annual Reports	Actual Expenditures ($ 000s)*
1996/1997	60	46,718.789
1997/1998	67	80,536.071
1998/1999	66	96,905.765
1999/2000	57	77,672.005

*The figures do not reflect the total actual expenditures given that some management unit annual reports were not available at the time of compilation. As data are provided, provincial summaries are adjusted. Also, errors in some annual reports were detected during compilation. Errors have been corrected to produce this summary.

The FMP and management unit annual report data cannot be effectively compared until such time as five years of annual report data have been accumulated for each FMP. As such, five years of data on actual renewal and tending expenditures (i.e., for FMPs approved in 1998) will not be available until 2002. By 2007, all management units will have five years worth of data on actual regeneration and tending expenditures to compare against the forecasted figures in their FMPs.

It is not possible to compare the actual renewal and tending expenditures from one management unit annual report year against one-fifth of the forecasted values included in the FMP, because actual levels of renewal activity fluctuate significantly in a given year.

The reports of past forest operations for those FMPs approved in 1998, which will be the first to compare forecast and actual renewal and tending expenditures, will not be written until 2003/04. By 2008/09 all of the management unit reports of past forest operations will be able to compare forecast vs. actual renewal and tending expenditures. This is done in accordance with the phase-in provisions in Appendix VIII of the FMP Manual. As a result of these phase-in provisions, it is not possible to develop a meaningful comparison of forecasted levels of renewal and tending versus actual expenditures in this review.

Synopsis

Concerns were expressed during the EA hearing regarding "…the uncertainty of long-term funding for forest renewal…", and that "…reductions in artificial regeneration treatments will adversely impact wood supply…"(Koven and Martel 1994, Page 225). Since the EA Approval, MNR has established the Forest Renewal Trust, the Forestry Futures Trust and a Special Purpose Account, which finance forest regeneration activities. Funding has now been secured for each management unit in a way that reflects the renewal and tending activities required to manage the forest in a sustainable manner. This has resulted in a substantial increase in the regeneration expenditures across the province. It will take some time to be able to compare the forecast and actual renewal and tending expenditures by management unit. However, the amount and type of renewal and tending activities conducted, and the associated silvicultural effectiveness, is monitored and reported at the management unit and provincial levels.

MNR remains committed to ensuring renewal and tending expenditures are tracked and has made recommendations to improve silvicultural planning, which includes examination of previous expenditures and forecasted expenditures. See Section 3.1.8 Planning of Harvest, Renewal and Maintenance Operations, of MNR's Timber Class EA Review for more information.

6.0 STATE OF THE FOREST REPORT, 2001

In keeping with T&C 114(a)(iv), the most recent five-year State of the Forest Report (i.e. The State of the Forest Report, 2001) is submitted as part of this review. It has been prepared in accordance with T&C 84 and Appendix 22, and is provided under separate cover. This same report also meets the requirements for a State of the Forest Report under Section 22 of the *Crown Forest Sustainability Act*.

7.0 GLOSSARY OF TERMS

The purpose of this Glossary of Terms is to define and explain the terms used in the Timber Class EA Review. There are Environmental Assessment terms associated primarily with the 1994 EA Board's 'Decision and Reasons for Decision' as well as terms used in forestry or otherwise. Forestry terms are primarily from the document "Forest Management Planning Manual for Ontario's Forests". Definitions that have been taken fully, modified or adapted from an already existing source are so indicated. Underlined words within definitions are also defined in the glossary. References for these entries are abbreviated in brackets at the end of the definition and can be referenced as follows:

Aird	Aird, Paul L., "Conservation for the sustainable development of forests worldwide: A compendium of concepts and terms" The Forestry Chronicle. 70(6), 1994.
ARM	Access Roads Manual. (August 1992)
BCFT	British Commonwealth Forest Terminology, Part I (1953)
CBS94	Canadian Biodiversity Strategy, Working Document For Internal Discussion. Prepared by The Federal-Provincial-Territorial Biodiversity Working Group (September 30,1994).
CBS95	Canadian Biodiversity Strategy. Canada's Response to the Convention on Biological Diversity. 1995.
CFIT	A Guide to Canadian Forest Inventory Terminology and Usage (1978)
CFSA	*Crown Forest Sustainability Act* (1995)
CSDF	"Criteria for the Sustainable Development of Forests." Seminar of Experts on Sustainable Development of Boreal and Temperate Forests. Conference on Security and Cooperation in Europe. Natural Resources Canada, Ottawa, 1994.
CTA	*The Crown Timber Act* (1982)
EAA	*The Environmental Assessment Act* (1975)
EAB	Evaluation and Audit Branch of Corporate Services, MNR.
EA Decision	Environmental Assessment Board's *Reasons for Decision and Decision: Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario (EA-87-02)* (1994)
EALS	An Ecosystem Approach to Living Sustainably. A Perspective for the Ministry of Natural Resources. September, 1995.
FITC	Forest Inventory Terms in Canada. 1988. Canadian Forest Inventory Committee, Forestry Canada.

FMM	Forest Management Manual for the Province of Ontario (1980)
Forman	Forman, R. T. T. and M. Godron. 1986. Landscape Ecology. John Wiley and Sons, New York, N.Y.
FOSM	Forest Operations and Silviculture Manual (1995)
FRAP	Forest Resource Assessment Policy (1996)
FRI	Forest Inventory Procedure for Ontario (1978)
ISO	International Standards Organization
MFM	Manual of Forest Management Plan Requirements for the Province of Ontario (1977)
Miller, T., Jr.	1990. Living in the Environment. Wadsworth Publishing Co., Belmont, California.
MNR	MNR POLICY FR 12 02 01
Morrison	Morrison, Michael L., B.G. Marcot and R.W. Mannan. 1992. Wildlife-Habitat Relationships: Concepts and Applications. The University of Wisconsin Press, Madison.
Nyberg, J.B; Harestad, A.S.; Bunnell, F.L.	1987. Old Growth by Design: Managing Young Forests for Old Growth Wildlife. Trans. Fifty-second N. Am. Wildl. Nat. Resour. Conf. Edited by R. E. McCabe. Wildl. Manage. Inst. pp.70-81.
Odlum.	Fundamentals of Ecology. Third edition.
OTA	Office of Technological Assessment, U.S. Congress (1987)
PA	*The Pesticides Act*, Revised Statutes of Ontario, 1990, Chapter P.11, July 1993, Printed by the Queen's Printer for Ontario.
SDF	"Sustainable Development of Forests: A Systematic Approach to Defining Criteria, Guidelines, and Indicators." Seminar of Experts on Sustainable Development of Boreal and Temperate Forests. Conference on Security and Cooperation in Europe. Natural Resources Canada, Ottawa, 1994.
SEIM	Socio-Economic Impact Model
SM	Scaling Manual (1995)
Sonneveld	Sonneveld, I.S. 1979. Land Evaluation and Land (scape) Science. Enshede, The Netherlands: International Training Center.
STC	Silvicultural Terms in Canada. 1992. Science and Sustainable Development Directorate, Forestry Canada, Ottawa.
TMPM	Timber Management Planning Manual for Crown Land in Ontario, (1985).

Trenhaile	Trenhaile, Alan S. 1990. The Geomorphology of Canada. Oxford University Press, Ontario.
URN	Items from Terminology of Forest Science: Technology Practice and Products (1971) are listed by Universal Reference Number.
WD	Webster's Ninth New Collegiate Dictionary. 1983. Miriam-Webster Inc., Thomas Allen and Sons Ltd., Markham.

Definitions

ABANDONMENT (roads)

The use management strategy adopted when a road has fulfilled its original use and is no longer required, or when maintenance cannot be justified.

Natural Abandonment: The natural degradation of a road when it is not maintained. Road maintenance has ceased and steps are not taken to prevent the use of the road by vehicular traffic through means of physical disablement.

Physical Abandonment: A deliberate act to render a road unusable by vehicular traffic. (ARM)

ABORIGINAL

Aboriginal peoples of Canada have been defined by Section 35 of the *Constitution Act*, 1982, to include the Indian, Inuit and Metis peoples of Canada

ACCESS CONTROL (roads)

The closure of a road to public travel or the restricted access to a road for certain specified uses for given periods of time. (modified ARM)

ADAPTIVE MANAGEMENT

Management based on continuous learning. (EALS)

AGE

1. **Of a Tree:**
   breast height: The number of annual growth rings between the bark and the pith, as counted at breast height.
   harvest: The number of years required to grow from seeding or planting to maturity.
   stump: The number of annual growth rings between the bark and the pith, as counted at stump height.
   total: The number of years elapsed since the germination of the seed or the budding of the sprout, root sucker, or cutting.

2. **(FRI Usage) Of a Forest, Stand or Forest Type:** the average age of the trees in the working group species **only** that comprise it.

AGE CLASS

One of the intervals into which the age range of forest stands is divided for classification and use. (Adapted URN 87)

ALLOWABLE CUT

The volume of wood that may be harvested, under management, for a given period. (STC)

see Available Harvest Area

AMENDMENTS

see Plan Amendments

ANNUAL WORK SCHEDULE

A statement, mainly tabular in form, showing the order and extent of all work of any nature to be carried out during one year consistent with the forest management plan. (Adapted URN 4417)

APPELLANTS

A party that appeals the decision of a court or tribunal.

AREA OF CONCERN (AOC)

An area of value to users/uses which may be affected by forest management activities. These areas require modifications to those operations usually prescribed. Areas of Concern include such features as wildlife habitats, rare vegetation, tourism considerations, streams, canoe routes, railways, trout lakes/fisheries, other lakes, campsites, portages, park boundaries, residences, lodges, cottages, deer yards, public roads, osprey nesting sites, heronries. (EA Decision)

AREA OF NATURAL AND SCIENTIFIC INTEREST (ANSI)

Areas of land and water containing natural landscapes or features which have been identified as having values related to natural heritage protection, scientific study, or education. Depending upon the features of particular areas, they may be referred to as life science or earth science sites. These areas vary in their level of significance and their vulnerability to environmental impacts.

AREA OF THE UNDERTAKING

An area consisting of 385,000 square kilometres (or 38.5 million hectares) of Crown land on which forest management activities are conducted, referred to as the 'Area of the Undertaking'. Forest Management Plans are prepared for management units within this area.

ARTIFICIAL REGENERATION

Renewal of a tree crop by direct seeding or by planting seedlings or cuttings. (STC)

also see Regeneration

ASSESSMENT

The analysis or evaluation of data and information collected through inventory and monitoring programs.

AUDIT

An independently led review of the adequacy of financial and management practices, controls and processes to ensure that the organization continues to be in control and in compliance with relevant legislation, policies and directives. (EAB)

AVAILABLE HARVEST AREA (AHA)

The managed forest area which may be harvested during the planning term. The available harvest area is a component of the projected harvest area of the selected management alternative.

BARREN AND SCATTERED (B & S)

Productive forest land which, because of natural or artificial disturbance, contains only scattered trees (stocking below 0.25) or no trees at all with either shrub cover or bare soil, but no significant amount of regeneration. (modified FRI)

BENEFIT (Syn.: Forest Benefit)

The product or outcome (e.g., cubic metres of wood, hectares of habitat) of objective achievement through the management of forest cover.

BIOLOGICAL DIVERSITY (Syn.: Biodiversity)

The variability among living organisms from all sources including *inter alia* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (CBS95)

BRANCH ROAD

see Road: Branch

BUMP UP

The elevation of a Forest Management Plan, or a component part of it, from the class environmental assessment to an individual assessment status. Anyone can request a bump-up. The acceptance of a bump-up is subject to approval by the Minister of Environment and Energy.

Note: Although the term 'bump-up' is still used in this document, the amended* Environmental Assessment Act (RSO 1990, chapter E.18, as amended)*now refers to this procedure as a 'Part II Order'.

BY- PASS

Area available for harvest which is not harvested for operational reasons (e.g., inaccessibility, inoperable terrain).

CLASS ENVIRONMENTAL ASSESSMENT

When used in relation to a class of undertakings is an environmental assessment submitted pursuant to subsection 6.1 and section 39 of the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended). A class of undertakings may be defined with respect to any attribute, quality or characteristic. Subject to the Class Environmental Assessment approval, the undertakings comprising the class are no longer subject to the requirement of specific approval under the Act.

CLASSIFICATION

A means of arranging entities into groups or sets on the basis of their similarities and relationships, or their dissimilarities. (EALS)

CLEANING

An operation in a young stand, not past the sapling stage, to free the favoured trees from undesirable individuals of similar age or size which overtop them or are likely to do so. Cleaning may be accomplished by hand or by mechanical or chemical means. (Modified MFM)

CLEARCUT (harvest method)

Area harvested under the clearcut silvicultural system.

The removal of the entire standing crop over a considerable area in one operation, with or without leaving seed trees. (adapted URN 1064 & adapted URN 1065)

CLEARCUT SYSTEM

A silvicultural system of regenerating an even-aged forest stand in which new seedlings become established in fully exposed micro-environments after most or all of the existing trees have been removed. Regeneration can originate naturally or artificially. Clearcutting may be done in blocks, strips or patches. (modified STC)

also see Silvicultural System

COLDWATER BODIES

Those lakes, rivers and streams that can support salmonids, such as lake or brook trout.

COMMERCIAL THINNING

see Thinning: Commercial

COMMUNITY (ecological)

An integrated group of species inhabiting a given area and influencing one another's distribution, abundance, and evolution. (Aird)

CONIFER

1. Any of an order (Coniferales) of mostly evergreen trees and shrubs including forms (as pines) with true cones and others (as yews) with an arillate fruit. (WD)

   Needle-bearing trees that produce seeds in cones. (EA Decision)

CONSERVATION

Management of the human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations, and includes the preservation, maintenance, sustainable utilization, restoration and enhancement of the environment. Modern conservation theory incorporates the notion that what is to be conserved is not so much the physical state of an ecological system as the ecological processes by which that state is created and maintained. (Aird)

CONTIGUOUS CUTS

A term used to describe clearcuts that are adjoining or close together. (EA Decision)

CONTINGENCY AREA or CONTINGENCY HARVEST AREA

see Harvest Area: Contingency

CONTINGENCY PLAN

An interim forest management plan which is required if a forest management plan cannot be prepared and approved on or before the expiry date of the current plan. (modified EA Decision)

COOLWATER BODIES

Those lakes, rivers and streams which support percids, such as walleye, and esocids, such as northern pike.

CORRIDOR

An area of uniform width bordering both or one side of a lineal feature such as a stream or route. (FITC)

CRITERIA

Standards by which forest sustainability are judged.

also see Sustainability Criteria

CRITICAL FISH HABITAT

Those habitats which are needed to maintain the overall productive capacity of the fishery. These can include spawning areas for fish species with stringent spawning requirements, such as cobble areas for walleye and lake trout; highly productive nursery and feeding areas such as wetlands; essential refuges or cover, such as rocky areas used by young-of-the-year bass to avoid predators during the winter; and any narrow migration routes.

CROWN CHARGES

All prices, charges, fees, penalties, costs, expenses, interest and fines imposed under the *Crown Forest Sustainability Act* or under a forest resource licence. (CFSA)

CROWN FOREST

A forest ecosystem or part of a forest ecosystem that is on land vested in Her Majesty in right of Ontario and under the management of the Minister of Natural Resources. (CFSA)

CROWN FOREST HEALTH

The health of Crown forests.
also see Forest Health

CROWN FOREST SUSTAINABILITY ACT

An Act of the Ontario legislature to provide for the sustainability of Crown forests and, in accordance with that objective, to manage Crown forests to meet social, economic and environmental needs of present and future generations. (modified CFSA)

CROWN LAND

Land vested in Her Majesty in right of Ontario.

CROWN LAND USE ATLAS

The Crown Land Use Atlas is a consolidation of the existing local land use direction from the Ontario's Living Legacy Land Use Strategy, District Land Use Guidelines and other approved land use documents. Initially the Crown Land Use Atlas will cover only the area of the undertaking.

CULTIVATION

The act of loosening or breaking up the soil about growing plants to foster growth. (WD)

CUTTING CYCLE

The planned interval between partial harvests in an uneven-aged stand. (STC)

DATA

Observations or measurements of the attributes (characteristics) of entities such as people, places, things or events that, individually, have relatively little intelligence.

DECLARATION ORDER

An Order by the Minister of Environment and Energy under Section 3.2 of the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended), often removing the need for a proponent to comply with the full requirements of the *Environmental Assessment Act*. It may exempt a proponent or an undertaking entirely from the Act, or it may qualify the exemption with the imposition of conditions.

DEPLETED AREA

Managed forest area on which merchantable volume has been decreased due to harvest, fire, insect, disease, or other causes, and where forest renewal is required.

DESIGNATED PURPOSE

A purpose designated by the Regulations. (CFSA)

DIRECT SEEDING

see Seeding: Direct

DISEASE

Harmful deviation from normal functioning of physiological processes, generally pathogenic or environmental in origin. (STC)

DISTRICT LAND USE GUIDELINES (DLUG)

A document which indicates how land and water resources within a district are to be utilized in the achievement of the resource program objectives assigned to the district through a regional Strategic Land Use Plan. District Land Use Guidelines identify where and in what manner the Ministry of Natural Resources (MNR) may use Crown land, and to what extent it may wish to suggest uses of private land, in working toward the achievement of MNR objectives and targets.

Note: The Ontario Living Legacy Land Use Strategy has updated the land use direction for many areas. The District Land Use Guidelines continue to provide local land use direction for areas that were not dealt with in the Ontario Living Legacy Land Use Strategy. The land use direction from the Ontario Living Legacy Land Use Strategy and District Land Use Guidelines will be consolidated in the Crown Land Use Atlas. The District Land Use

***Guideline* definition will be updated in the *Forest Management Planning Manual* to reflect these changes.**

ECOLOGICAL APPROACH

The management of human activities so that ecosystems, their structure, composition and function and the processes that shaped them can continue at appropriate temporal and spatial scales. (CBS94)

ECOLOGICAL LAND CLASSIFICATION (ELC)

A hierarchical approach to classifying land which is based on a consistent framework of landscape and site-level ecosystems by combinations of geologic, climatic, vegetative, soil, and landform features.

ECOREGION

An ecological landscape unit (ranging in resolution from hundreds of thousands to tens of thousands of square kilometres) characterized by distinct patterns of responses to climate as expressed by soils, hydrology, vegetation (species ranges and productivity), and fauna.

ECOSITE (Syn.: General Standard Site Type, Site Type)

An ecological landscape unit (ranging in resolution from tens to hundreds of hectares) comprised of relatively uniform geology, parent materials, soils, topography, and hydrology, occupied by a consistent complex of successionally related vegetation conditions.

ECOSYSTEM

The sum of the plants, animals, environmental influences, and their interactions within a particular habitat. (STC)

ELIGIBILITY CRITERIA

A distinguishing set of characteristics for the identification of areas eligible for harvest, renewal and tending operations for the 20-year period of the plan.

ENDANGERED SPECIES

Any native species as listed in the Regulations under the *Endangered Species Act* that is at risk of extinction throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.

ENVIRONMENT

Defined in section 1 of the *Environmental Assessment Act* to include air, land, water, plant and animal life, including humans, the social, economic and cultural conditions and the influence the life of humans or a community, any building, structure, machine or device, and any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting from human activities or any part of combination of the foregoing and the interrelationships between any two or more of them.

ENVIRONMENTAL COMMISSIONER FOR ONTARIO

The Environmental Commissioner for Ontario is a person designated by the Lieutenant Governor in Council to undertake the function of reviewing the implementation of the *Environmental Bill of Rights* (SO, 1993, Chapter 28) and compliance in ministries with the requirements of this Act. In addition, at the request of a minister, provide guidance to that ministry on how to comply with the requirements of this Act.

ENVIRONMENTAL REGISTRY

The Registry, established under the *Environmental Bill of Rights* (SO, 1993, Chapter 28), is an internet site that provides the public with electronic access to environmentally significant proposals and decisions, appeals of instruments, and other information related to Ministry of Environment and Energy decision-making.

EVEN-AGED MANAGEMENT

Silvicultural systems in which stands have an even-aged structure (e.g., clearcut and shelterwood systems). (modified STC)

EVEN-AGED STRUCTURE

A forest, stand or forest type in which relatively small age differences exist between individual trees. The differences in age are usually 10 to 20 years; if the stand will not be harvested until it is 100 to 200 years old, larger differences up to 25% of the rotation age may be allowed. (STC)

EXEMPTION ORDER

An order made under the *Environmental Assessment Act* (RSO 1990, chapter E.18) prior to the coming into force of section 3.2 of this Act. This term is now replaced by the term Declaration Order under the amendments made to the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended).

FERTILIZATION

The application of chemical or organic fertilizers with the objective of increasing the unit area soil productivity. (STC)

FINAL CUT (harvesting operation)

The removal of seed or shelter trees after regeneration has been effected, or removal of the entire crop of mature trees under a clearcut silvicultural system. (TMPM)

FIRST NATION

A band as defined in the *Indian Act* (Canada). (CFSA)

FISH HABITAT

Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. (section 34(1) of the *Fisheries Act*)

FORECAST HARVEST AREA

see Harvest Area: Forecast

FOREST

1. (Ecology) A plant community predominantly of trees and other woody vegetation, growing more or less closely together (URN 2441);

2. (Silvicultural Management) An area managed for the production of timber and other forest products or maintained under woody vegetation for such indirect benefits as protection of site or for recreation (URN 2442).

3. (Forest Diversity) An aggregate of stands.

FOREST BENEFIT

see Benefit

FOREST COVER

All the trees as described by the Forest Resources Inventory (FRI).

FOREST DYNAMICS

The natural processes involved in the development of a forest and associated with growth and changes to its structure and composition through time.

FOREST ECOSYSTEM

An ecosystem in which trees are or are capable of being a major biological component. (CFSA)

FOREST HEALTH

The condition of a forest ecosystem that sustains the ecosystem's complexity while providing for the needs of the people of Ontario. (CFSA)

FOREST INFORMATION MANUAL (FIM)

A Manual prepared under section 68 of the *Crown Forest Sustainability Act* and approved by the regulations, including amendments to the Manual approved by the regulations. (CFSA)

FOREST INVENTORY

A survey of an area to determine such data as area, condition, timber, volume, and species, for specific purposes such as planning, purchase, assessment, evaluation, management, or harvesting. (modified CFIT)

FOREST LAND

Land whose primary use is for forestry, and may include land not currently supporting tree growth. (CFIT)

FOREST MANAGEMENT

Generally, the practical application of scientific, economic and social principles to the administration and working of a forest for specified objectives; more particularly, that branch of forestry concerned with the overall administrative, economic, legal and social aspects, and with the essentially scientific and technical aspects, especially silviculture, protection and forest regulation. (Aird)

FOREST MANAGEMENT PLAN

A document containing pertinent information and prescriptions by means of which forest policy, aims, and objectives are translated into a continuity of specific treatments on a management unit for a specified period of years. (Modified MFM)

Current Plan or Currently Approved Plan: An approved forest management plan that is in the implementation stage of the planning cycle.

Past Plan or Previous Plan: The expired forest management plan for the planning term immediately preceding the current plan/planning term.

FOREST MANAGEMENT PLANNING MANUAL (FMPM)

A Manual prepared under section 68 of the *Crown Forest Sustainability Act* and approved by the regulations, including amendments to the Manual approved by the regulations. (CFSA)

FOREST MODEL

A computer-based simulation that within definable parameters forecasts the development of the forest and the benefits that become available from a forest through time. (modified STC)

Forest models simulate forest development in response to both natural forces (growth, succession, disturbances) and active intervention (harvesting, renewal, tending).

FOREST OPERATIONS

The harvesting of a forest resource, the use of forest resource for a designated purpose or the renewal or maintenance of a forest resource, and includes all related activities. (CFSA)

FOREST OPERATIONS AND SILVICULTURE MANUAL (FOSM)

A Manual prepared under section 68 of the *Crown Forest Sustainability Act* and approved by the regulations, including amendments to the Manual approved by the regulations. (CFSA)

FOREST OPERATIONS PRESCRIPTION

A site-specific, integrated plan developed prior to the commencement of forest operations. A forest operations prescription links the silvicultural ground rules of the forest management plan to the scheduled operations of the annual work schedule.

FOREST PRODUCTS

Any raw material yielded by trees. (Adapted URN 2484)

FOREST PROTECTION

The branch of forestry concerned with the prevention, control and management of damage to forests arising from pests, insects, diseases, storm, frost, and other climatic agents, and also from the action of humans. (Adapted URN 2487)

FOREST REGULATION

A branch of forestry concerned with the technical aspects of organizing and maintaining a forest to fulfil the objectives of forest management. (Adapted URN 2488)

FOREST RENEWAL

Those silvicultural operations that are undertaken to provide forest cover. This normally includes the activities of site preparation and regeneration.

also see Regeneration

FOREST RENEWAL CHARGES

The charges to be paid in respect of the area under a Forest Resource Licence as required by the *Crown Forest Sustainability Act*, the Regulations and the licence.

FOREST RENEWAL TRUST

The trust which provides for reimbursement of silvicultural expenses incurred after March 31, 1994 in respect of Crown forests in which forest resources have been harvested and for such other matters as may be specified by the Minister, on such terms and conditions as specified by the Minister. (CFSA)

FOREST RESOURCE

Trees in a forest ecosystem and any other type of plant life prescribed by the regulations of the *Crown Forest Sustainability Act* that is in a forest ecosystem. (CFSA)

FOREST RESOURCE ASSESSMENT POLICY (FRAP)

A policy which identifies common principles and standards with which Ontario's forests will be assessed. It requires that the impacts of management alternatives be identified, and the availability of forest resources such as timber products be addressed. All aspects of the resource will be examined as part of the decision-making process. The policy serves to integrate policy and planning efforts toward ecosystem-based management.

FOREST RESOURCE LICENCE

A licence issued under Part III of the *Crown Forest Sustainability Act* which authorizes the harvest of forest resources in a management unit or the use of forest resources in a management unit for a designated purpose. The term of this licence shall not exceed five years. (modified CFSA)

FOREST RESOURCES INVENTORY (FRI)

A resource inventory conducted for each management unit on average every twenty years. The FRI divides the area into a number of components, such as water, non-forested, non-productive forest, and productive forest; and further classifies each component by ownership/land use categories. The FRI provides descriptive information about the timber resource on each management unit (e.g., stand age, stand height, species composition, stocking level) in the form of interpreted aerial photographs, forest stand maps and a set of standard inventory ledgers referred to as reports. (modified EA Decision)

FORESTRY

Generally, a profession embracing the science, business, and art of creating, conserving, and managing forests (i.e., forest management) and forest lands (i.e., management units) for the continuing use of their resources, material, or other forest products. (modified URN 2493)

FORESTRY FUTURES TRUST

The trust which provides for the following matters, on such terms and conditions as may be specified by the Minister:

1. The funding of silvicultural expenses in Crown forests where forest resources have been killed or damaged by fire or natural causes.
2. The funding of silvicultural expenses on land that is subject to a forest resource licence, if the licensee becomes insolvent.
3. The funding of intensive stand management and pest control in respect of forest resources in Crown forests.
4. Such other purposes as may be specified by the Minister. (CFSA)

FOREST STAND

see Stand

FOREST TYPE

A group of forested areas or stands of similar composition; forest types are usually separated and identified by species composition and often by height and crown closure classes. (STC)

FOREST UNIT

An aggregation of forest stands for management purposes which have similar species composition, develop in a similar manner (both naturally and in response to silvicultural treatments), and are managed under the same silvicultural system.

FREE GROWING

see Free-to-Grow

FREE-TO-GROW (FTG), (Syn.: Free Growing)

Stands that meet stocking, height, and/or height growth rate, as specified in the ground rules and are judged to be essentially free from competing vegetation. (Adapted FMM)

GENERAL STANDARD SITE TYPE (GSST)
(Syn.: Ecosite, Site Type)

A coding or labelling system in the silvicultural guide to allow for referencing of site description information on similar sites across the province. Regional ecosites are the working unit of General Standard Site Types. (modified EA Decision)

GEOGRAPHIC INFORMATION SYSTEM (GIS)

An information system that uses a spatial database to provide answers to queries of a geographical nature through a variety of manipulations, such as sorting, selective retrieval, calculation, spatial analysis, and modelling. (STC)

GROSS MERCHANTABLE VOLUME (GMV)

Volume of the main stem, excluding stump and top but including defective and decayed wood, of trees or stands. (CFIT)

GROSS TOTAL VOLUME (GTV)

Volume of the main stem, including stump and top as well as defective and decayed wood, of trees or stands. (CFIT)

GROUND RULES

see Silvicultural Ground Rules

GUIDELINES

Statements that lead or direct a course of action. (SDF)

In Ontario, this includes all documents cited in Appendix "A" of the *Forest Operations and Silviculture Manual* (i.e., provincial guidelines, construction/operational manuals, resource/environmental manuals, and others).

HABITAT

An area with the combination of resources (food, cover, water) and environmental conditions (temperature, precipitation, presence or absence of predators and competitors) that promotes occupancy by individuals of a given species (or population) and allows those individuals to survive and reproduce. (Morrison)

HARDWOOD

The wood of an angiospermous tree as distinguished from that of a coniferous tree. (WD)

HARVEST AREA

Available: see Available Harvest Area

Contingency: The area set aside to accommodate unforeseeable circumstances (e.g., wildfire). Contingency area will serve as replacement for harvest area, and only be used if needed (in the current Forest Management Planning Manual the area must be sufficient to provide for a minimum of three months and a maximum of one year of harvest operations; when in reference to proposed ten-year planning period the minimum is one year to two years). If surplus harvest area has been identified, the contingency area must be identified from within the surplus harvest area plus whatever additional area, if any, is needed to meet the requirements.

Forecast: The area selected for harvest during the term of the plan up to the level of the available harvest area. The forecast harvest area consists of the planned harvest area plus the surplus harvest area.

Optional: Areas that are eligible for harvest and could reasonably be harvested during the ten-year period.

Planned: That portion of the forecast harvest area which is expected to be harvested to meet the industrial demand.

Preferred: Areas identified for operations up to the level of the Available Harvest Area by forest unit for ten years from the optional harvest area

Projected: The levels of harvest through time as predicted in the analysis of management alternatives using modelling tools.

Surplus: That portion of the forecast harvest area on which harvest operations are not expected to occur during the five-year term of the plan due to lack of industrial demand.

HARVEST CUT

The cut(s) recorded as depletions from which yield is derived; it may be either a single (clearcut) or a series of cuts to produce regeneration (shelterwood, selection). (Modified MFM)

HARVESTING

The removal of forest products for utilization, comprising cutting and sometimes initial processing and extraction. (Adapted URN 2944)

HARVEST METHOD

An adjective used to further define or modify one of the three basic silvicultural systems, specifically the harvesting component/technique (e.g., *strip* clearcut, *group* shelterwood).

HEADWATER

The source (for example, springs, bogs, lakes, etc.) and first order streams of a drainage system.

HERBICIDE

Any chemical preparation used to kill or inhibit the growth of forbs, grasses, woody plants, and their seeds. (STC)

IMPLEMENTATION MANUALS

see Guidelines

IMPROVEMENT CUTTING

A cutting made in a stand past the sapling stage primarily to improve composition and quality by removing less desirable trees of any species. (STC)

In Ontario, this term is generally used in relation to uneven-aged management. Improvement cutting in even-aged stands if referred to as "thinning".

INDICATOR

1. A parameter that is linked to a value or objective and that can be measured in relation to specific criterion. In the Manuals developed under the *Crown Forest Sustainability Act*, indicators are related to the concept of forest sustainability.
2. An organism or ecological community so strictly associated with particular environmental conditions that its presence is indicative of the existence of these conditions. (WD)

INDIVIDUAL ENVIRONMENTAL ASSESSMENT

An environmental assessment that is subject to the requirements set out in Part II of the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended).

INFORMATION

Information comes from data that have been processed (e.g., selected, organized, synthesized) to be meaningful for use in decision-making.

INFORMATION SYSTEM

A system (manual or automated or computerized) which enables the processing and dissemination of information. (Modified ISO)

INSECTICIDE

Any chemical or biological preparation used to kill or disrupt the development of insects. (STC)

INTERVENORS

One who voluntarily enters a pending lawsuit because of a stake in it.

INTRA VIRES

Within the scope of authority allowed by law.

INVENTORY

see Forest Inventory

JUDICIAL REVIEW

A court's power to review the actions of other branches or levels of government.

LANDSCAPE

A heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout. (Forman)

A landscape is normally defined by geomorphology or climate.

LANDSCAPE ECOLOGY

The study of the response of species or communities to patterns across more than one patch. A patch refers to an area which has more or less homogeneous environmental conditions. (Morrison)

LANDSCAPE PROCESSES

In relation to the Regional HydroEcological Simulation System, it is composed of two components, net primary productivity and water yield. These components are measurable indicators of forest sustainability.

LEVEL (forest sustainability)

In relation to acceptable levels of indicators of forest sustainability criteria: a standard or range of values.

LICENSEE

A person or company to whom a Forest Resource Licence has been granted. (SM)

LOCAL CITIZENS COMMITTEE (LCC)

A standing advisory committee of local citizens representing a range and balance of interests, appointed by the Ministry of Natural Resources to participate in the forest management planning process. (EA Decision)

LOGGING METHOD

A term which indicates the process used to move wood products from stump to roadside during a harvesting operation (e.g., full tree, tree length, shortwood). The choice of process has nutrient cycling implications.

MANAGED FOREST

Crown forest for which there is no legal or land use planning decision which prevents the land from being managed for timber production.

MANAGEMENT ALTERNATIVE

A set of specific management objectives, each with quantified targets, and management strategies which aim to achieve those objectives.

also see Selected Management Alternative

MANAGEMENT UNIT (MU)

All or part of a Crown forest which has been designated as a management unit for the purposes of the *Crown Forest Sustainability Act*.

MEASURABLE INDICATOR

Any variable that facilitates data collection over time and can be analyzed to establish trends in order to monitor or evaluate progress. (Modified FMPM and SDF)

MERCHANTABLE TIMBER

A conifer, poplar or white birch log of which more than one-half of the total content is sound wood when the content is measured in cubic metres, or;

A hardwood log other than poplar or white birch of which more than one-third of the total content is sound wood when the content is measured in cubic metres. (SM)

MERCHANTABLE TREE

A standing conifer, poplar or white birch tree where more than one-half of the total content of wood is sound, and;

A standing hardwood tree, other than poplar or white birch, where more than one-third of the total content of wood is sound. (SM)

MID-PLAN REVIEW

An exercise that takes place in year four of a ten-year forest management plan that will assess the progress in plan implementation and will determine if the implementation of the plan is consistent with the long-term strategic direction.

MIXEDWOOD(S)

1. Trees belonging to either of the botanical groups Gymnospermae or Angiospermae and which are substantially intermingled in stands. Also, the wood of such trees mixed together in substantial quantities. (STC)

A forest type in which 26-75% of the canopy is softwood.
(STC)

MONITORING

The collection and analysis of data over extended periods of time. It provides information on past and present ecological, social, cultural, and economic trends, and a basis for predictions about future conditions. (EALS)

NATURAL FOREST

A forest that has evolved and reproduced itself naturally from organisms previously established, and that has not been significantly altered by human activity. (modified Aird)

NATURAL REGENERATION

Renewal of a tree crop by natural seeding, sprouting, suckering, or layering. (STC)

also see Regeneration

NATURAL RESOURCE

A renewable (forest, water, wildlife, soil, etc.) or non-renewable (oil, coal, iron, etc.) resource that is a natural asset. (Aird)

NET CANOPY CARBON ASSIMILATION

The extent to which the rate of carbon used exceeds carbon given off by the forest. Net canopy carbon assimilation is a measure of net primary productivity and is expressed in kilograms of carbon per hectare per day.

NET MERCHANTABLE VOLUME (NMV)

Volume of the main stem, excluding stump and top as well as defective and decayed wood, of trees or stands. (CFIT)

NET PRIMARY PRODUCTIVITY

The rate of storage of organic matter in plant tissues in excess of the respiratory utilization by the plants during the period of measurement. (Odlum)

NON-PRODUCTIVE FOREST LAND

In the Forest Resources Inventory, it is that part of the forest ecosystem consisting of treed muskeg, open muskeg, rock, and brush and alder.

NON-SPATIAL

Refers to information stored in a form or format that is not directly usable by geographic information systems (e.g., hard-copy maps or tabular datasets).

also see Geographic Information System, Geographically Referenced, and Spatial Database

OBJECTIVE

An object of action; an end as a cause of action. (SDF)

OLD GROWTH

A stand of mature or overmature trees relatively uninfluenced by human activity. (STC)

OLD GROWTH FORESTS

1. Old growth forests are well past the age of maximum growth, frequently showing great horizontal and vertical density of structure and plant species composition, and possessing one or more features not seen in much younger forests such as snags, down woody material, or arboreal lichens. (Nyberg)

2. Ecosystems characterized by the presence of old trees with their associated plants, animals, and ecological processes. They show little or no evidence of human disturbance. (Ontario, Old Growth Forests Policy Advisory Committee, 1994)

ONTARIO LIVING LEGACY LAND USE STRATEGY

Ontario Living Legacy Land Use Strategy (1999) is the principle document providing land use direction within the Area of the Undertaking. It provides both broad land use policy for the Area of the Undertaking, and area-specific direction for new protected areas, forest reserves and enhanced management areas.

OPERATIONAL PLANNING: DETAILED

The planning process for each five-year operational term in which the stands selected for operations and values information is confirmed, or updated and Area of Concern prescriptions are prepared.

OPERATIONAL TERM

A five-year interval for which detailed operational planning is prepared during the ten-year period of a forest management plan.

OPERATIONAL ROAD

see: ROAD: OPERATIONAL

OVERMATURE

In even-aged management, those trees or stands past the mature stage. (STC)

OWNERSHIP (land)

Classification of the provincial land base into the categories of Crown, patent and other vested interest.

PATENT LAND

Land transferred from Her Majesty the Queen in the Right of Ontario to an individual, company or corporation in perpetuity.

PESTICIDE

Any organism, substance or thing that is manufactured, represented, or sold or used as a means of directly or indirectly controlling, preventing, destroying, mitigating, attracting, or repelling any pest or of altering the growth, development or characteristics of any plant life that is not a pest and includes any organism, substance or thing registered under the *Pest Control Products Act* (Canada). (PA)

PLAN

see Forest Management Plan

PLAN AMENDMENT

Any change to a forest management plan during its term which does not alter the intent of the plan. Amendments could range from simple corrections to the text of an approved forest management plan to substantial alterations which require comprehensive planning, including opportunities for public consultation. There are three categories of amendments: administrative, minor, and major. Granting requests for amendments and the categorization of proposed amendments is the responsibility of the MNR District Manager as specified in the *Forest Management Planning Manual*.

PLAN AUTHOR

The professional forester, registered under *The Ontario Professional Foresters Association Act*, 2000, who is responsible for preparing the plan. (EA Decision).

PLANNED HARVEST AREA

see Harvest Area: Planned

PLANNING CYCLE

That period of time beginning with the initiation of plan preparation and ending with the expiration date of the plan. The cycle includes both the plan preparation and plan implementation.

PLANNING: PHASE I

The process of preparation review and approval of the ten-year forest management plan, and the detailed operational planning for the first five-year operational term.

PLANNING: PHASE II

The process of preparation review and approval of the detailed operational planning for the second five-year operational term.

PLAN PERIOD

The interval for which a ten-year forest management plan is prepared and approved for implementation on a management unit.

PLAN RENEWAL

The time in the planning cycle marked by the approval of a forest management plan.

PLAN TERM

The interval for which operational planning is prepared and approved for implementation on a management unit.

POPULATION

The aggregate of all units, finite or infinite, forming the subjects of study. (URN 4500)

PRE-COMMERCIAL THINNING

see Thinning: Pre-Commercial

PRESCRIBED BURNING

The knowledgeable application of fire to a specific land area to accomplish predetermined forest management or other land use objectives. (STC)

PRIMARY ROAD

see Road: Primary

PRINCIPLE

A fundamental law or rule as a guide to action; a rule of conduct; a fundamental motive for action, especially one consciously recognized and followed. (SDF)

PRODUCTION FOREST

Productive forest land, at various stages of growth, with no obvious physical limitations on the ability to practice forest management. (modified EA Decision)

PRODUCTIVE FOREST LAND

All forest areas which are capable of growing commercial trees, irrespective of planning decisions, and which is further sub-divided into "protection forest" and "production forest".

PRODUCTIVITY

A change in biomass (volume) per unit area and time (yield, increment). (Kimmins, Oct. 3, 1993, Module 2.)

PROFESSIONAL FORESTER

see Registered Professional Forester

PROJECTED HARVEST AREA
see Harvest Area: Projected

PROPONENT: As defined in the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended), Section 1, is a person who, carries out or proposes to carry out an undertaking, or is the owner or person having charge, management of control of an undertaking. In this application, the proponent is the Ministry of Natural Resources.

PROTECTION FOREST
Productive forest land on which forest management activities cannot normally be practised without incurring deleterious environmental effects because of obvious physical limitations such as steep slopes and shallow soils over bedrock. (modified EA Decision)

REGENERATION
The renewal of a tree crop whether by natural (self-sown seed or by vegetative means) or artificial means (seeding and planting). This term may also be used to describe the young crop itself. (Adapted URN 4843, 4844, 4846, 4848)

REGENERATION CLASS
The area, and the young trees in the area, being managed during the regeneration interval in the shelterwood silvicultural system. In this interval old and young trees occupy the same area, young being protected by the old. (STC)

REGENERATION INTERVAL
The period between the seed cut and the final cut on a particular area under one of the shelterwood systems. (URN 4852)

REGION or REGIONAL
An administrative geographical unit of the Ministry of Natural Resources.

REGIONAL HYDROECOLOGICAL SIMULATION SYSTEM (RHESSys)
A landscape ecological data processing and simulation system which computes landscape level forest ecosystem productivity, forest evapotranspiration and run-off production as well as the spatial patterns of soil and litter water content.

REGISTERED PROFESSIONAL FORESTER (R.P.F.)
A person licensed under the *Professional Foresters Act*, 2000.

REMOVAL CUT
One or more cuts in the shelterwood silviculture system that releases established seedlings . The last removal cut is the final removal cut. (GLSL)

RENEWAL
see Forest Renewal, Plan Renewal

RESERVE
Areas which were initially selected for harvest, but were subsequently removed from selected harvest areas through the area of concern planning process.

ROAD

Note: For the purposes of clarity both definitions from the current Forest Management Planning Manual and the Timber Class EA Review have been provided here. Definitions from the Timber Class EA Review are in bold and italicised. Definitions from the current Forest Management Planning Manual are in regular type.

Primary: A road which provides access to Crown land for more than 15 years.

Primary: A road that provides the principal access for the management unit.

Secondary: A road which provides access to Crown land for 5 to 15 years.

Branch: A road that branches off an existing or new primary or branch road, including those roads that provide access to separate areas of operations.

Tertiary: A road which provides short term access to Crown land for no more than 5 years. (ARM)

Operational: A road within an area of operations

ROAD MAINTENANCE

Routine: Those day to day activities necessary to maintain a road for the traffic using it.

Emergency: Road maintenance that requires immediate attention to restore access and reduce the chance of personal injury, damage to equipment, inconvenience to road users and further road damage (major washouts, blocked culverts, damaged bridges, etc.). (ARM)

SALVAGE

The recovery or harvesting of timber that has been killed or damaged by natural causes, such as fire, wind, flood, insects, and disease. (FOSM)

SCALING MANUAL

A Manual prepared under section 68 of the *Crown Forest Sustainability Act* and approved by the regulations, including amendments to the Manual approved by the regulations. (CFSA)

SCARIFICATION

Mechanical loosening of the topsoil of open areas, or breaking up the forest floor, in preparation for regeneration by natural seeding. (Adapted URN 5134)

SECONDARY ROAD

see Road: Secondary

SEED COLLECTION AREA (SCA)

An area established in a large, relatively pure, uniform stand of mature or semi-mature trees, average or above average in form and vigour. Such an area provides an interim source of identified seed for use in an artificial regeneration program. The area will be assigned a seed source number; any seed collected should be identified by that number. These areas receive minimal treatment as the trees are normally cut for seed collection. (MNR)

SEED CUT

Removing trees in a mature stand so as to effect permanent opening of its canopy and so provide conditions for securing regeneration from the seed of retained trees; the first (if there was no preparatory cutting) of the shelterwood cuttings under a shelterwood system. (Adapted URN 5191)

SEEDING - DIRECT

The scattering of seed more or less evenly over a whole area. (URN 698)

SEED ORCHARD

A relatively small area, established with superior stock derived from selected parent material, and intensively managed to provide a sustained supply of genetically improved seed for use in an artificial regeneration program. The orchard will be assigned a seed source number; any seed collected should be identified by that number. (MNR)

SEED PRODUCTION AREA (SPA)

A relatively small area, that is medium-aged, sexually mature, and above average in form and vigour. Seed production areas are managed specifically for the production of seed. Such an area provides an interim supply of source identified seed for use in an artificial regeneration program. Seed is usually collected from standing trees using non-destructive collection techniques. The area will be assigned a seed source number; any seed collected should be identified by that number. (MNR)

SEED-TREE (harvest method)

A method of harvesting and regenerating a forest stand in which all trees are removed from the area except for a small number of seed-bearing trees that are left singly or in small groups. The objective is to create an even-aged stand. (STC)

SELECTED (Syn., Allocation)

Designation of such as harvest, renewal, and tending.

SELECTED MANAGEMENT ALTERNATIVE

The management alternative which achieves a realistic set of benefits (timber and non-timber) and achieves a sustainable future forest condition over time.

also see Management Alternative

SELECTION

Choosing individuals with desired qualities to serve as parents for the next generation. (STC)

SELECTION CRITERIA

A distinguishing set of characteristics that allows the determination and ranking of areas for harvest, renewal and tending operations for the five-year term of the plan.

SELECTION CUT (harvest method)

Periodic cutting of trees chosen individually or by groups, in an uneven-aged stand, in order to recover the yield and develop a balanced uneven-aged structure, while providing the cultural measures required for tree growth and seedling establishment. The cuts are usually a mix of regeneration cuts and improvement cuts. (STC)

SELECTION SYSTEM

An uneven-aged silvicultural system where mature and/or undesirable trees are removed individually or in small groups over the whole area, usually in the course of a cutting cycle. Regeneration is generally natural. (Adapted BCFT)

also see Silvicultural System

SHELTERWOOD SYSTEM

An even-aged silvicultural system where mature trees are harvested in a series of two or more cuts (preparatory, seed, removal, final) for the purpose of obtaining natural regeneration under shelter of the residual trees, whether by cutting uniformly over the entire stand area or in narrow strips. Regeneration is natural or artificial. Regeneration interval determines the degree of even-aged uniformity. (Adapted MFM)

GROUP SHELTERWOOD SYSTEM

Patches of advanced regeneration arising from thinnings or from natural disturbances, commonly developed in even-aged stands. Where this condition is prominent, shelterwood cuttings can be made specifically in relation to the requirements of each group of advanced regeneration. These clumps of regeneration are enlarged by the removal of all or most of the trees above them and starting preparatory or seeding cuttings around them. The holes created in the canopy are gradually enlarged to keep pace with the establishment of reproduction.

Irregular Shelterwood System: Harvest cutting in which opening of the canopy is irregular and gradual; generally in groups, with the final cutting often in strips; regeneration natural; regeneration interval long, often up to half the rotation, and the resultant crop considerably uneven-aged and irregular. Much of the harvesting of Canadian old-growth conifer stands composed of tolerant species has been a type of irregular shelterwood.

Strip Shelterwood System: A shelterwood system in which regeneration cuttings are carried out on fairly wide strips, generally against the prevailing wind, and progress rapidly; regeneration is mainly natural, regeneration interval short, and resultant crop fairly even-aged and regular.

Uniform Shelterwood System: A shelterwood system in which the canopy is opened fairly evenly throughout the regeneration area; regeneration is mainly natural, though it may be supplemented artificially; regeneration interval fairly short and resultant crop more or less even-aged and regular. (STC)
also see Silvicultural System

SILVICS

The study of the life history, requirements, and general characteristics of forest trees and stands in relation to the environment and the practice of silviculture. (Aird)

SILVICULTURAL GROUND RULES

Specifications, standards, and other instructions which direct management on management unit areas during the period of the forest management plan.

SILVICULTURAL MANAGEMENT STRATEGIES

The means by which forest cover is managed to achieve objectives. Silvicultural management strategies broadly define the harvest method and pattern, the kinds and levels of renewal and tending activities, necessary road access, and the associated funding requirements.

SILVICULTURAL SYSTEM

A process, following accepted silvicultural principles, whereby crops constituting a forest are tended, harvested, and regenerated, resulting in the production of crops of distinctive form. Systems are conveniently classified according to the method of harvesting the mature stands with a view to regeneration and according to the type of crop produced thereby. (Adapted URN 5383)

also see Clearcut System, Selection System, Shelterwood System

SILVICULTURAL TREATMENT

An activity, whether biological or managerial, through which a forest operations prescription is met.

SILVICULTURAL TREATMENT PACKAGE

The range of acceptable treatments (harvest, renewal, tending) for the appropriate forest unit and site type combination which can be undertaken at various intervals throughout the life of a forest stand to achieve the desired future forest condition.

SILVICULTURE

Generally, the science and art of cultivating forest crops, based on a knowledge of silvics (URN 5384). More particularly, the theory and practice of controlling the establishment composition, constitution, and growth of forests (URN 5385).

SITE

An area considered in terms of environment, particularly as this determines the type and quality of the vegetation the area can carry. (URN 5413)

SITE PREPARATION

Disturbance of the forest floor and the topsoil to create suitable conditions for natural or artificial regeneration by mechanical or chemical means, or by prescribed burning. (Modified MFM)

SITE TYPE

see Ecosite, General Standard Site Type

SOFTWOOD(S)

Cone-bearing trees with needles or scale-like leaves belonging to the botanical group Gymnospermae. Also, stands of such trees and the wood produced by them. (STC)

SPATIAL or SPATIAL DATABASE (geographic information system)

A collection in interrelated geographically referenced data stored without unnecessary redundancy to serve multiple applications as part of a geographic information system. (FITC)

SPECIES

A singular or plural term for a population or series of populations of organisms that are capable of interbreeding freely with each other but not with members of other species. (Aird)

STAGE OF MANAGEMENT

One in a series of harvest cuts performed over the life of a stand. The type and number of cut stages depends upon the silvicultural system being used.

STAND (Syn.: Forest Stand)

A community of trees possessing sufficient uniformity in composition, constitution, age, arrangement, or condition to be distinguishable from adjacent communities. (Adapted URN 5700)

STANDARD

1. A standard is a document that provides, for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.
2. Measurable parameters established for use as a rule or basis for comparison in measuring or judging quantity, quality, value, capacity, or other characteristics.

STAND IMPROVEMENT

see Improvement Cutting

STOCKING

An expression of the adequacy of tree cover on an area, in terms of crown closure, percentage of stocked quadrats, number of trees, basal area, or volume, in relation to pre-established managerial norm. (Adapted CFIT)

STRATEGIC LAND USE PLAN (SLUP)

A document which indicates at a broad level how the Ministry of Natural Resources will use Crown lands and encourage the use of private lands in meeting its goal of managing natural resources on a sustained yield and multiple-use basis. Strategic Land Use Plans are developed at a regional level and contain objectives and related targets. These plans provide the policy framework for district land use plans/guidelines.

Note: Strategic Land Use Plans have been replaced by Ontario Living Legacy Land Use Strategy (1999).

STRATEGY

The means or steps to achieving an objective.

STREAM

A flowing, channelized body of water of any size. (Trenhaile)

STREAM ORDER

The laws of drainage composition using Strahler's system in which streams of a given order only have tributaries of lower order.

First-Order Streams:

Streams which have no tributaries.

Second-Order Streams:

Streams or stream segments which have only first-order tributaries. A second-order stream begins where two first-orders meet, and ends where it meets another second-order stream, so starting a third-order stream. (Trenhaile)

SUB-MANAGEMENT UNIT

Generally refers to any sub-division of a management unit. In relation to forest diversity and landscape pattern it refers to portions of the same management unit that are physically/geographically separated from each other.

SUB-REGION or SUB-REGIONAL

A geographic subdivision of a region for the purposes of collecting and analyzing data, and planning.

SUCCESSION

Changes in species composition in an ecosystem over time, often in a predictable order. (Aird)

SUPPLEMENTARY DOCUMENTATION

Supporting/additional text, tables, maps, etc., which summarize the background information which was used in preparation of a forest management plan and which documents a number of elements of the planning process, particularly the participation of the Local Citizens Committee, the results of public consultation, road planning, and area of concern prescription setting.

SURPLUS HARVEST AREA

see Harvest Area: Surplus

SUSTAINABILITY

Long term Crown forest health. (CFSA)

SUSTAINABILITY CRITERIA

Standards by which forest sustainability are judged. For each criterion, there may be one or more indicators which demonstrate whether or not a standard is being attained.

SUSTAINABLE DEVELOPMENT

Consistent, deliberate, and sustained, yet flexible, action to maintain in a balanced manner the goods and services of the forest and to use these to increase the contribution of the forest to social well-being. (CSDF)

SUSTAINABLE FOREST LICENCE

Under Part III of the *Crown Forest Sustainability Act*, a renewable licence to harvest forest resources in a management unit that requires the licensee to carry out renewal and maintenance activities necessary to provide for the sustainability of the Crown forest in the area covered by the licence. This type of licence may be granted for a term of up to 20 years. (CFSA)

TENDING

Generally, any operation carried out for the benefit of a forest at any stage of its life (e.g., cleaning, fertilization, spacing, pruning).

TERTIARY ROAD

see Road: Tertiary

THINNING

A cutting made in an immature crop or stand primarily to accelerate diameter increment but also, by suitable selection, to improve the average form of the trees that remain. The removal of trees may be from the dominant and co-dominant crown classes to favour the best trees of those same crown classes (known as crown thinning), or the removal of trees may be to control stand spacing and favour desired trees using a combination of thinning criteria without regard to crown position (know as free thinning).

Commercial Thinning: A thinning in which the harvested trees are removed from the site and used for commercial purposes.

Pre-Commercial Thinning: A thinning that does not yield trees of commercial value, and is usually designed to improve crop spacing. (modified STC) In Ontario, the term pre-commercial thinning is generally used in relation to even-aged management only. Pre-commercial thinning in uneven-aged management is referred to as "improvement cutting" or stand improvement.

THREATENED SPECIES

Any native species that is at risk of becoming endangered through all or a portion of its Ontario range if the limiting factors are not reversed.

TREATMENT

see Silvicultural Treatment

TREE IMPROVEMENT

The control of parentage combined with other silvicultural activities (such as site preparation or fertilizing) to improve the overall yield and quality of products from forest lands. (Adapted STC)

ULTRA VIRES

Beyond the scope of authority allowed by law

UNDERTAKING

Defined in section 1 of the *Environmental Assessment Act* (RSO 1990, chapter E.18, as amended) and related to this proposal as - an enterprise or activity or a proposal, plan or program in respect of an enterprise or activity by or on behalf of Her Majesty in right of Ontario, by a public body or public bodies or by a municipality or municipalities

UNEVEN-AGED MANAGEMENT

Silvicultural systems in which stands have an uneven-aged structure (i.e., shelterwood or selection systems). (modified STC)

UNEVEN-AGED STRUCTURE

A forest, stand, or forest type in which intermingling trees differ markedly in age. The differences in age in an uneven-aged stand are usually greater than 10 to 20 years. (STC)

UNMERCHANTABLE

A tree or stand that has not attained sufficient size, quality, and/or volume to make it suitable for harvesting. (STC)

USE MANAGEMENT STRATEGY (road)

A statement outlining the purpose and description, and defining the roles and responsibilities related to use, maintenance, use control, abandonment and monitoring of roads on Crown land. (ARM)

VALUE

In relation to Values Mapping: A benefit or condition of the forest that is linked to a specific geographic area, that could be of interest from various points of view, and which may need to be protected as a results of timber management activities.

In relation to Indicators of Forest Sustainability Criteria and Objective Achievement: The numerical measure of a quantity or a number denoting magnitude.

VALUE ADDED

This is a measure of net output. It avoids double counting of products sold during the accounting period by including only final goods. For instance, only chairs are included, whereas the wood that goes into making them does not appear separately. It is equal to income (Gross Provincial Income). It may be calculated by adding wages, interest, rent and profits. Alternatively, it is equal to revenues minus the total cost of purchased inputs. (SEIM)

VOLUME

The amount of wood in a tree, stand, or other specified area, according to some unit of measurement or some standard of use. (CFIT)

also see Gross Merchantable Volume, Gross Total Volume, and Net Merchantable Volume.

VULNERABLE SPECIES

Any species that on the basis of the best available scientific evidence is a species of special concern in Ontario but is not threatened or endangered. (COSSARO)

WARMWATER BODIES

Those lakes, rivers and streams which support mainly centrarchids, such as smallmouth bass or pumpkinseeds.

WATER

Lakes, rivers, etc., taken to the high-water mark of generally flooded area. (FRI)

WATERSHED

The area drained by an underground or surface stream, or by a system of streams. (Aird)

WATER YIELD

In relation to the Regional HydroEcological Simulation System, this is a function of two major variables, evapotranspiration and run-off.

WETLAND

Land that is seasonally or permanently covered by shallow water, as well as land where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water-tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens. (*Wetlands Policy*)

WILDLIFE

Nonhuman, nondomesticated, noncultivated organisms; all wild mammals, birds, reptiles, amphibians and fishes.

WILDLIFE HABITAT

Areas of the natural environment where plants, animals, and other organisms, excluding fish, survive in self-sustaining populations, and from which they derive services such as cover, protection, or food.

WORKING GROUP

An aggregate of stands, including potential forest areas assigned to this category, having the same predominant species, and managed under the same broad silvicultural system. (Modified FRI)

YIELD

The actual or estimated harvest of forest products over a given period of time.

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